FILE COPY

Interim Measure Modification Evaluation Progress Report 3 of 6

for

Industrial Service Corporation
1633 S. Marsh Avenue
Kansas City, Missouri

Prepared By:

Deffenbaugh Industries, Inc.
18181 West 53rd Street
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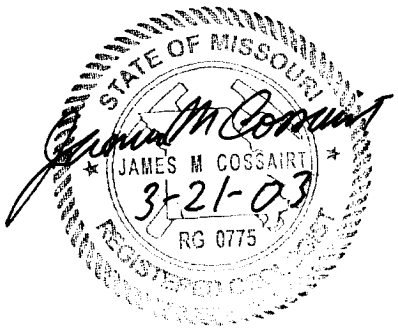

March, 2003

DEFFENBAUGH
INDUSTRIES

March 20, 2003

Mr. Tom Judge, RG
Missouri Department of Natural Resources
Hazardous Waste Program
P.O. Box 176
Jefferson City, MO 65102

Re: Administrative Order on Consent for Corrective Action #VII-94-H-0024 (AOC) and Post-Closure activity at Industrial Service Corporation (ISC).

Dear Mr. Judge:

This letter report is prepared to convey the results of the third round of six bi-monthly sampling events intended to evaluate the effectiveness of the groundwater extraction and treatment system. System operation commenced on June 6, 2002. An installation report was prepared and submitted in July describing the installation and first month of system operation. This progress report is for the period from January 1, 2003 to February 28, 2003.

System Operation and Aquifer Response

A graph of the volume of groundwater extracted on a daily basis during the reporting period is included for reference. The graph indicates that the volume is normally in the range of 4000 to 9000 gallons per day(g.p.d.) and averages about 4700 g.p.d. The total precipitation for the period was recorded at 1.75 inches and occurred between the dates January 28 and February 14, 2003. A discrepancy was noted in water meter volumes observed between the meter recording volume produced from the extraction wells and the meter monitoring discharge to the sanitary sewer. The meter for the extraction pumps pulsate with the cycling of each pumping stroke and results in a significantly inflated volume. The discharge meter cycles with the water level limit switches within the poly holding tank and is continuous when discharge occurs, resulting in a more accurate reading. Graphs from the two previous reports have been reconstructed based on this more accurate discharge volume and are also included in this report.

There were two interruptions in system operation during the reporting period. On January 17, the discharge pump and motor seized from damage caused by an earlier overfill incident. Based on discharge volume it was estimated that the system ceased operation on January 15. The pump was replaced with a temporary unit and the system was returned to operation on January 21. On February 7, the temporary pump was removed and replaced with a new unit with increased horsepower rating. Overload protection within the control box was insufficient, and the pump would not run without tripping the system. Numerous attempts to restart the system were initiated unsuccessfully over the next week utilizing fused protection until the appropriate circuitry was obtained and installed on February 14, 2003. The system was then returned to full operation and has remained so throughout the balance of the reporting period. Modifications to the limit switches were also completed during this period which ensure that the system will not experience any future overfill incidents.

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A hydrograph is also enclosed which corresponds in time to the flow graph previously discussed. The response of the "B" series bedrock wells to interruptions in the operation of the extraction system is consistent with that observed in previous reports. When the system stops operating, there is a corresponding rise in the static water elevations of wells installed in this horizon. Similarly, when the system is resumed there is a corresponding drop in the static water elevation. There was one significant precipitation event during the reporting period between February 12 and 14. This occurred during the last period when the system was not in operation. The "B" series wells appeared not to be significantly affected by the precipitation in that the static water levels returned to previous levels very soon after the system was returned to operation.

Water levels in the "A" series wells rose in response to this precipitation event. Water levels in other wells were also modestly affected by the precipitation. The response at well GW-7 was more closely related to the response observed at wells installed in the A horizon. There was an increase observed in the water level at well MW-11C which appears to be associated with the lack of system operation rather than the effect of precipitation.

Figure 2 has been prepared and is enclosed to illustrate the potentiometric surface of the aquifer as it appeared on January 8 during the sampling event conducted at that time. The map indicates a flow direction to the west at a gradient of approximately 0.16 ft/ft. The equipotential lines are influenced radially about the pumping wells and flow is modestly reversed from the monitoring wells located immediately down-gradient of these extraction points. This is an accurate depiction of the flow regime while the system is operating. During the intervals of system failure discussed previously, the response of wells installed in the "B" horizon is rather immediate and flow continues to the west as it did prior to the construction of the extraction system.

Groundwater Analytical Results

Samples of groundwater were collected from the approved subset of wells for this evaluation on January 8, 2003. All samples were collected following the approved procedures in the Sampling and Analysis Plan (SAP). All samples were analyzed by Environmental Science Corporation, Mt. Juliet, TN for the volatile organic compounds (VOC) contained in Attachment A of the SAP. Copies of the analytical reports and a laboratory prepared QA/QC review are enclosed for reference.

All samples were received at the correct temperature, in the proper containers, and with the appropriate preservatives. The samples were analyzed within holding times. Trip blanks and rinse blanks were analyzed without detections of any analytes. The field duplicate sample was reported with concentrations at comparable levels to the original sample. The laboratory review provides a summary of laboratory control standards, matrix spike and matrix spike duplicates, blank analysis, surrogate recoveries, internal standards, calibration, and instrument performance standards. There were a total of four compounds which required qualification on the basis of accuracy and matrix interference. A listing of analytes and associated qualifiers is included in Attachment A of the analytical report. There were no detections of analytes which required qualification in this round of

analysis. Samples which required dilution due to high concentrations of one or more of the analytes are noted on the report with the dilution factor used for the analysis.

The data is summarized and presented in the following table. Only compounds with reported detections are included in the table. Compounds not detected in the sample are so indicated by the letters BDL (below detection level) and are followed by the reportable concentration for that analyte in that sample.

ISC-KC THIRD BI-MONTHLY ANALYSIS 1-8-03

	PW-1	PW-2	TRENCH	EFFLUENT	GW-2R	GW-3	GW-4	EPA-R-1
benzene	BDL(5)	BDL(5)	BDL(50)	BDL(5)	**30.0**	**56.0**	**26.0**	**140.0**
sec-butylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**6.2**
1,1-dichloroethane	BDL(5)	BDL(5)	BDL(50)	BDL(5)	BDL(5)	BDL(5)	**10.0**	**36.0**
1,2-dichlorobenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**5.7**	**5.6**	BDL(5)	BDL(5)
1,4-dichlorobenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**8.6**	**11.0**	BDL(5)	BDL(5)
chloroethane	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**9.0**	**29.0**	**39.0**	**26.0**
cis-1,2-dichloroethane	BDL(5)	**11.0**	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**6.3**
ethylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**41.0**	**33.0**
isopropylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**5.8**
p-isopropyltoluene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**6.7**
1,4-dioxane	**180.0**	630.0	720.0	360.0	1200.0	220.0	1700.0	2000.0
methyl tert-butyl ether	BDL(1)	**3.4**	**18.0**	**1.6**	**3.2**	**5.2**	**17.0**	**150.0**
naphthalene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**110.0**	**110.0**
n-propylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	NA	BDL(5)	**16.0**
toluene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**8.7**	**95.0**
trichloroethene	BDL(5)	**8.3**	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(50)
1,1,1-trichloroethane	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**8.5**
1,2,4-trimethylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**14.0**	**24.0**	**130.0**
1,3,5-trimethylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**11.0**	BDL(5)	**37.0**
vinyl chloride	BDL(2)	**3.5**	BDL(2)	BDL(2)	BDL(2)	BDL(5)	BDL(5)	**2.4**
xylene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**200.0**	**340.0**

ISC-KC THIRD BI-MONTHLY ANALYSIS (CONT.)

	GW-6B	GW-8B	GW-9B	GW-10B	GW-11A	GW-11B	GW-11C	DUP -PW1
benzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
sec-butylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
1,1-dichloroethane	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**35.0**	BDL(5)
1,2-dichlorobenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
1,4-dichlorobenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
chloroethane	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
cis-1,2-dichloroethane	**19.0**	BDL(5)	**19.0**	**7.6**	BDL(5)	BDL(5)	**67.0**	BDL(5)
ethylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
isopropylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
p-isopropyltoluene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
1,4-dioxane	**540.0**	BDL(100)	BDL(100)	**380.0**	BDL(100)	**320.0**	**2700.0**	**180.0**
methyl tert-butyl ether	**9.2**	BDL(1)	**3.7**	**5.1**	**1.2**	**3.7**	**4.2**	**3.2**
naphthalene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**10.0**
n-propylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
toluene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
trichloroethene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	**14.0**	BDL(5)
1,1,1-trichloroethane	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
1,2,4-trimethylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
1,3,5-trimethylbenzene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)
vinyl chloride	BDL(2)	BDL(2)	BDL(2)	**2.6**	BDL(2)	BDL(2)	**110.0**	BDL(2)
xylene	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)	BDL(5)

A total of twenty-one compounds were detected from the analyses of these wells. Five of these (sec-butylbenzene, isopropylbenzene, p-isopropyltoluene, n-propylbenzene, and 111-trichloroethane) were detected at well EPA-R-1 only. None of these compounds were reported at a concentration above any level of concern.

Seven compounds were detected at no more than two locations. Six of these were reported from wells which have been impacted by LNAPL. The compound 1,2-dichlorobenzene was detected at well GW-2R and GW-3 at concentrations below all levels of concern. Toluene was detected at wells GW-4 and EPA-R-1 also below levels of concern. The compound 1,4-dichlorobenzene exceeded RBC and PRG guidance levels at locations GW-2R and GW-3. Ethylbenzene was reported in excess of RBC and PRG levels at wells GW-4 and EPA-R-1. The compound 1,3,5-trimethylbenzene was reported at wells GW-3 at a concentration of 11 ug/L and EPA-R-1 at a concentration of 37.0 ug/L.

This latter value exceeded both the RBC and PRG level of 12.0 ug/L. Xylene was detected at wells GW-4 and EPA-R-1. The concentration reported from the latter exceeded the PRG level of concern. The seventh compound, trichloroethene, was detected at well MW-11C at a concentration of 14.0 ug/L and in the sample collected from extraction point PW-2 at a concentration of 8.3 ug/L. Both of these reported concentrations exceed all levels of concern.

Isoconcentration maps have been prepared for all compounds detected at three or more locations. Figures 3 through 11 graphically depict the isoconcentrations constructed for the compounds benzene, cis-1,2-dichloroethane, 1,4-dioxane, MTBE, vinyl chloride, 1,1-dichloroethane, naphthalene, chloroethane, and 1,2,4-trimethylbenzene in that order. All isoconcentration lines are constructed based on the data collected from this sampling round. Depicted concentrations will be skewed in the direction of the nearest reported non-detect location. Figure 3 for instance, which depicts the concentrations of benzene, is believed to be a fairly accurate representation in the area of wells GW-3, GW-4, and EPA-R-1; but is skewed to the west in order to reach the nearest wells which are not reported with detections. This compound when detected is in exceedance of all regulated and guidance documents. It is not detected in any of the down-gradient wells.

Figure 4 is also consistent with previously submitted depictions of cis-1,2-dichloroethane. The isoconcentration lines are improved from previous maps in the up-gradient direction due to the detection at location EPA-R-1. This compound was in exceedance of the RPC and PRG levels (61 ug/L) at location GW-11C.

Figure 5 is an isoconcentration map for the compound 1,4-dioxane. The map indicates that the largest concentrations are located in a linear fashion between wells GW-11C and GW-2R. Concentrations are increased from previous sampling rounds at location GW-6B near the extraction points and decreased at well GW-9B down-gradient of the extraction points. Any detected value of this compound exceeds the guidance levels specified in the CALM document and in the RBC and PRG tables. There are no regulatory levels for this compound.

Figure 6 is the isoconcentration map constructed for the compound methyl tert-butyl ether. Concentrations reported from the wells containing free product range from 3.2 to 150.0 ug/L. The compound is detected at all down-gradient locations monitoring the B and C horizons with the exception of well GW-8B. MTBE is reported from theses wells at concentrations ranging from 3.7 to 9.2 ug/L. The compound was also detected in well GW-11A at a concentration of 1.2 ug/L. The CALM document establishes a level of concern for this compound at 20 ug/L. RBC and PRG tables establish a level of concern for tap water at 2.6 and 13.0 ug/L respectively.

Figure 7 is an isoconcentration map constructed for the compound vinyl chloride. Vinyl chloride is reported at well GW-11C at a concentration of 110.0 ug/L and well GW-10B at a concentration of 2.6 ug/L. All other locations down-gradient of the extraction points are reported non-detect at a reporting level of 2 ug/L. Vinyl chloride was reported at a concentration of 2.4 ug/L at location EPA-R-1. All other up-gradient points containing free product are reported non-detect at a reporting

levels of 5 ug/L due to required dilutions of the sample. Regulatory levels for this compound are established at a concentration of 2 ug/L and this value has been adopted by the CALM document also. Guidance levels are established at concentrations of .015 and .020 ug/L in the RBC and PRG tables respectively.

Figure 8 is the isoconcentration map constructed for the compound 1,1-dichloroethane. This compound was detected at locations GW-4, EPA-R-1, and GW-11C. There were no concentrations reported above any of the levels of concern.

Figures 9, 10 and 11 are isoconcentration maps of the compounds naphthalene, chloroethane, and 1,2,4-trimethylbenzene. These maps are similar to the one constructed for benzene in that the compounds are detected only in wells that have been impacted by LNAPL. All concentrations reported for these compounds are in exceedance of the levels in the RBC and PRG tables. In addition, the levels reported for naphthalene exceed the GTARC levels of the CALM document. It is notable that naphthalene was reported in the duplicate sample collected from the extraction point PW-1 at a concentration of 10.0 ug/L. This is the first reported detection of a compound associated with LNAPL contaminants in the groundwater samples collected from the extraction points.

Time-series charts have also been prepared for the down-gradient wells which have reported detections of VOC's. A total of seven analytes have been detected in these wells. The compound cis-1,2-dichloroethane was added to the list of analytes during the second quarter of 2000. Analytes 1,4-dioxane and methyl tert-butyl ether were added in the second quarter of 2002. The charts are prepared from the date of each well installation to the present. These graphs have been changed from those previously submitted to a logarithmic scale in order to provide improved definition at high and low concentration ranges. A value of ½ the reporting level has been used to represent concentrations reported as non-detect.

The graph of well GW-6B documents the longest period of time. Concentrations of all detected compounds generally diminish over time until the extraction system was initiated in June 2002. There was a decline in the concentration reported from four of the five compounds detected in the previous round of samples. The compound 1,4-dioxane was reported at an increased concentration and was also detected in the effluent from both extractions wells.

The graphs of wells GW-8B, 9B, and 10B show fluctuating concentrations over time. Well GW-8B was reported with no detections above the reporting level for compounds analyzed. Concentrations of MTBE and cis-1,2-dichloroethane were increased at well GW-9B although 1,4-dioxane was not reported above the detection level and had been reported in the previous round of analysis. There were slight increases at well GW-10B in the concentrations of MTBE and 1,4-dioxane while the concentration of cis-1,2-dichloroethane decreased and vinyl chloride remained unchanged.

The graphs of wells GW-11B and 11C document the shortest period of time. The concentration of MTBE at wells GW-11B remained constant from the previous round of analysis, but 1,4-dioxane

was detected at this point for the first time. Concentrations of all six compounds detected at well MW-11C remained relatively constant from the previous round of analysis. There were slight increases in the concentrations of 1,4-dioxane, cis-1,2-dichloroethane, and trichloroethene while vinyl chloride and MTBE were reported with concentrations exhibiting a modest decline.

Time-series graphs have also been prepared for wells which have been reported with a layer of LNAPL at any time in the past. This time period begins with samples collected by a micro-purge sampling technique initiated during the third quarter of 2000. Samples were not able to be collected from wells GW-2R and EPA-R-1 during the fourth quarter of 2000. A sample was also not collected from well GW-2R during the fourth quarter of 2001. A logarithmic scale is employed with these graphs due to the number of compounds detected and the range of reportable concentrations.

Generally, the detected compounds are BTEX and associated analytes. Concentrations fluctuate with time and demonstrate no evidence of a sustained trend. Some compounds at lower concentrations are eliminated periodically from the graph because of elevated reporting levels due to required sample dilutions. The graph of EPA-R-1 is a good example. The laboratory was successful in reducing the impact of sample dilutions during the two most recent rounds of analysis. This has resulted in the reporting of the compound 1,4-Dioxane at all of these locations and will provide better data for the analysis of compounds with lower concentrations over time.

Summary

The data continues to indicate that the extraction system may be providing a positive influence on the groundwater contaminant plume at the facility. Additional information is required and will be collected over the balance of the evaluation period.

The hydrograph and potentiometric surface maps continue to demonstrate a direct connection between the extraction wells and "B" zone monitoring wells installed near the base of the aquifer. A cone of depression has been established surrounding the extraction wells and has reversed flow from monitoring locations installed immediately down-gradient while the system is operational.

The analytical data collected from this lower zone yield a preliminary indication that concentrations are increasing near the extraction points. The detection of 1,4-dioxane at well GW-11B may indicate that the extraction system is inducing that compound to migrate downward from the "C " horizon. The detection of naphthalene in the duplicate sample obtained from the extraction well PW-1 may indicate the system is also encouraging migration of contaminants from the LNAPL zone as well.

This round of samples was collected only one week after the system was returned to operation after a period of system failure. It is difficult to base firm conclusions of the effectiveness of this extraction system on the data obtained in the first three rounds of analysis due to repeated system failures. The problems have been corrected effective February 14, 2003 and the system has been operating continuously since that date. Scheduled back flushing of the adsorber units every two

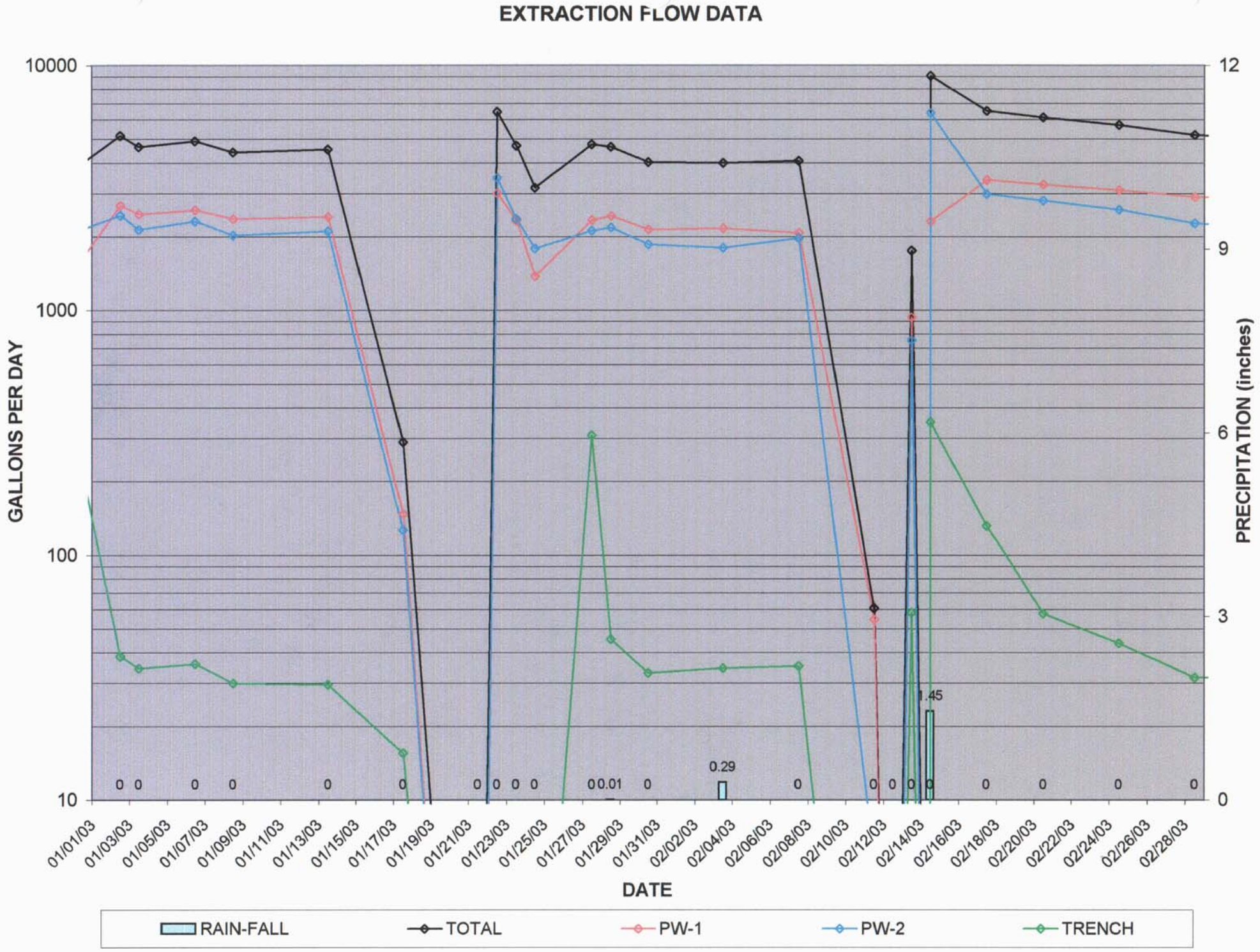
weeks will add some confidence that the system is properly maintained and functioning properly. Sample collection for the fourth round of analysis has been postponed from the scheduled date of March 5 to March 24 in order to allow a significant period of system operation and obtain a more representative sample of groundwater from the monitoring points.

Sincerely,

James M. Cossairt
Senior Project Geologist

c: David Garrett, EPA Region VII
Darleen Groner, MDNR

Graphs


EXTRACTION FLOW DATA
GALLONS PER DAY
PRECIPITATION (inches)
DATE
10000
1000
100
10
12
9
6
3
0
0.29
0.01
1.45
01/01/03
01/03/03
01/05/03
01/07/03
01/09/03
01/11/03
01/13/03
01/15/03
01/17/03
01/19/03
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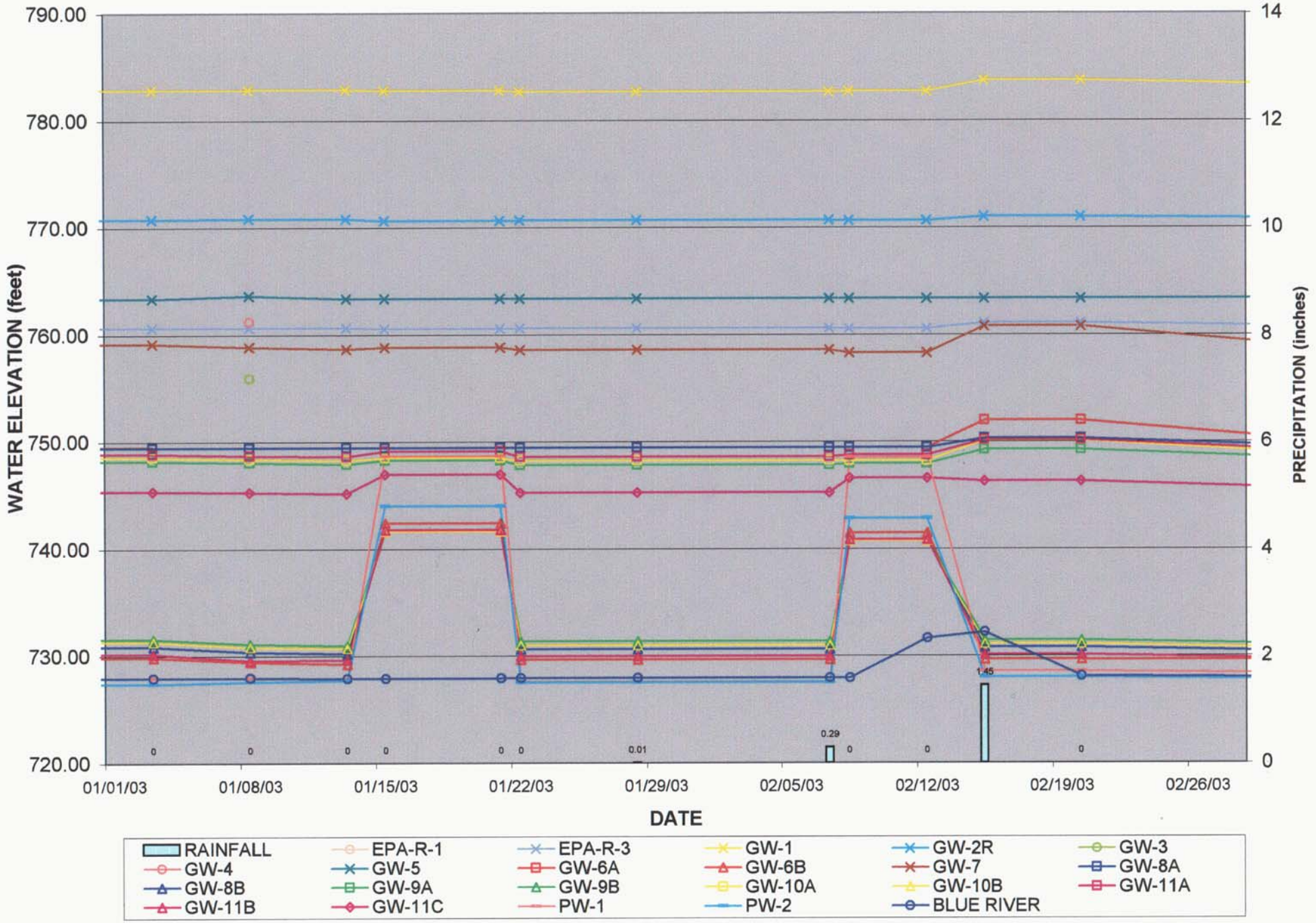
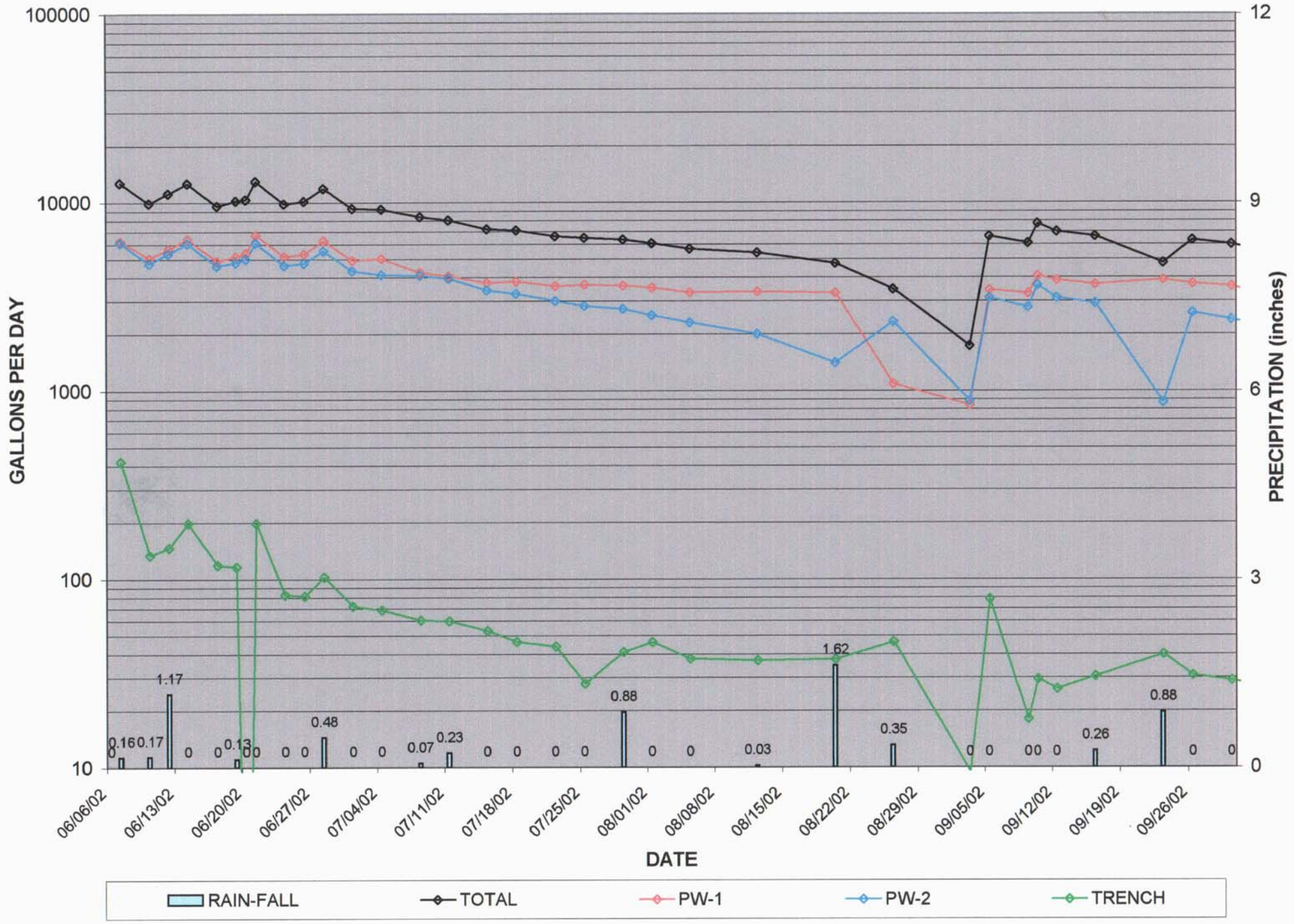
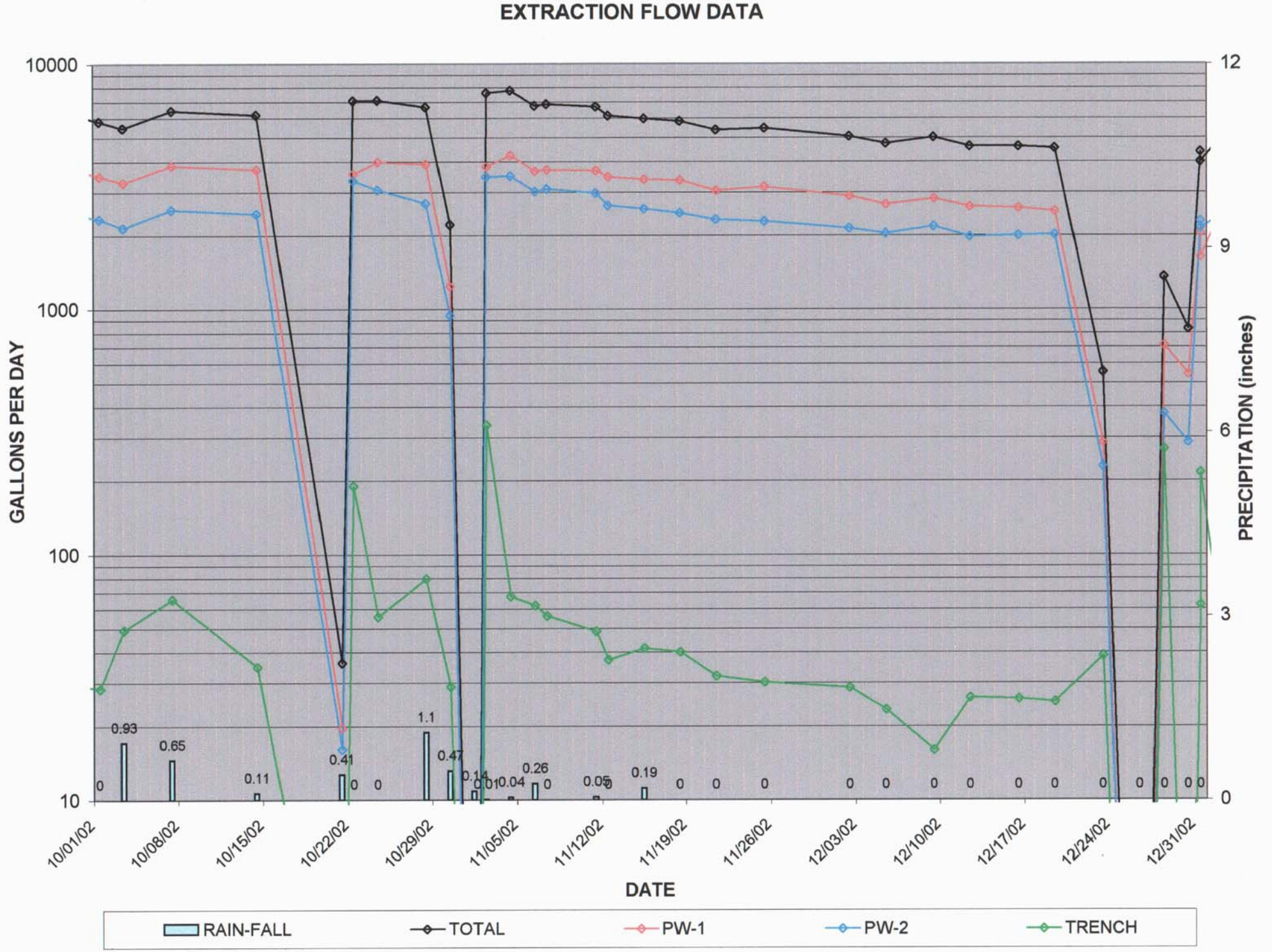
02/08/03
02/10/03
02/12/03
02/14/03
02/16/03
02/18/03
02/20/03
02/22/03
02/24/03
02/26/03
02/28/03
RAIN-FALL
TOTAL
PW-1
PW-2
TRENCH

ISC-KC HYDROGRAPH



EXTRACTION FLOW DATA




EXTRACTION FLOW DATA
GALLONS PER DAY
PRECIPITATION (inches)
DATE
10000
1000
100
10
12
9
6
3
0
10/01/02
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11/26/02
12/03/02
12/10/02
12/17/02
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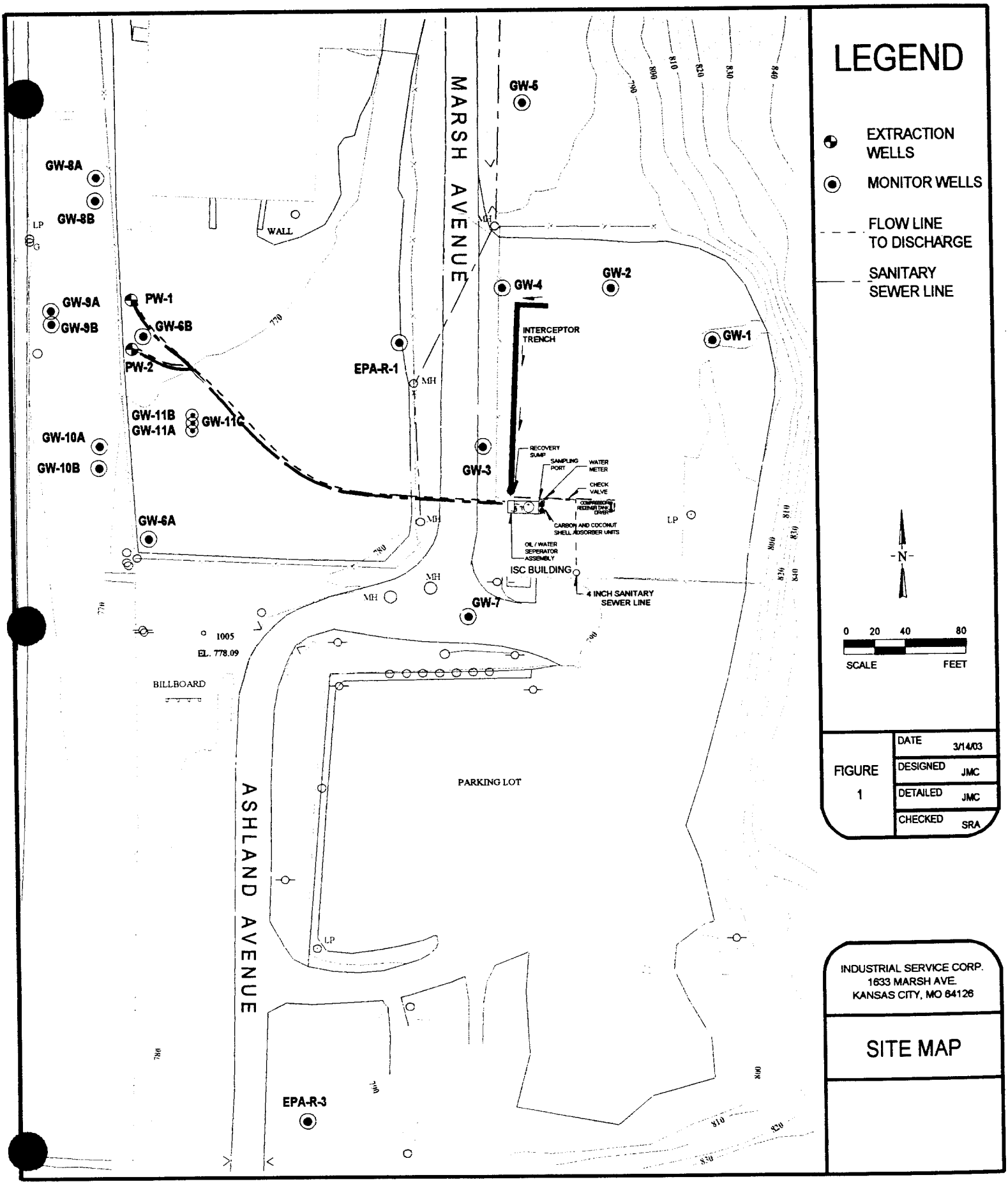
0.93
0.65
0.11
0.41
1.1
0.47
0.14
0.04
0.26
0.05
0.19
RAIN-FALL
TOTAL
PW-1
PW-2
TRENCH

Figure 1-2



LEGEND

- EXTRACTION WELLS
- MONITOR WELLS
- FLOW LINE TO DISCHARGE
- SANITARY SEWER LINE

N

0 20 40 80
SCALE FEET

FIGURE 1	DATE	3/14/03
	DESIGNED	JMC
	DETAILED	JMC
	CHECKED	SRA

INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

SITE MAP

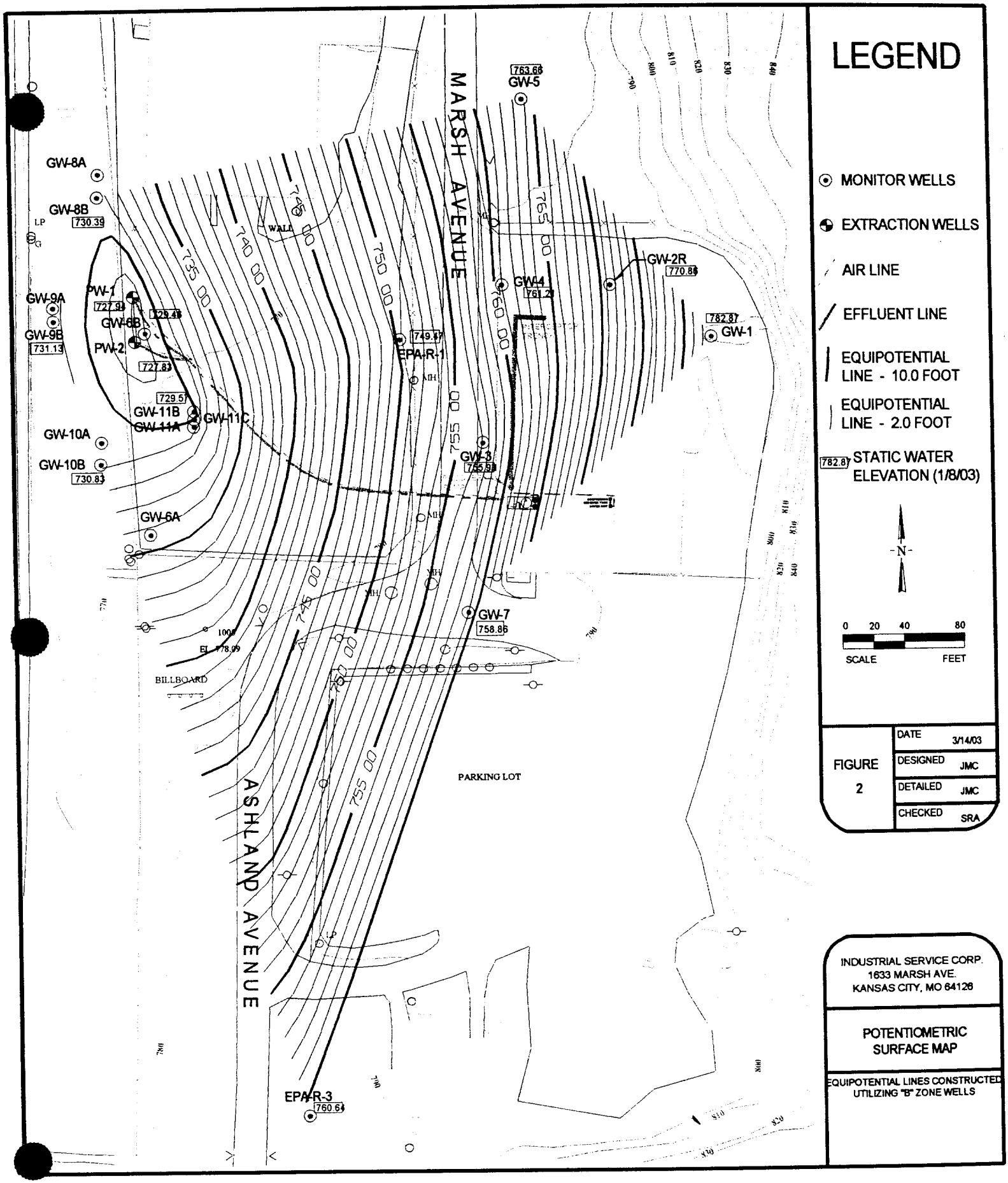
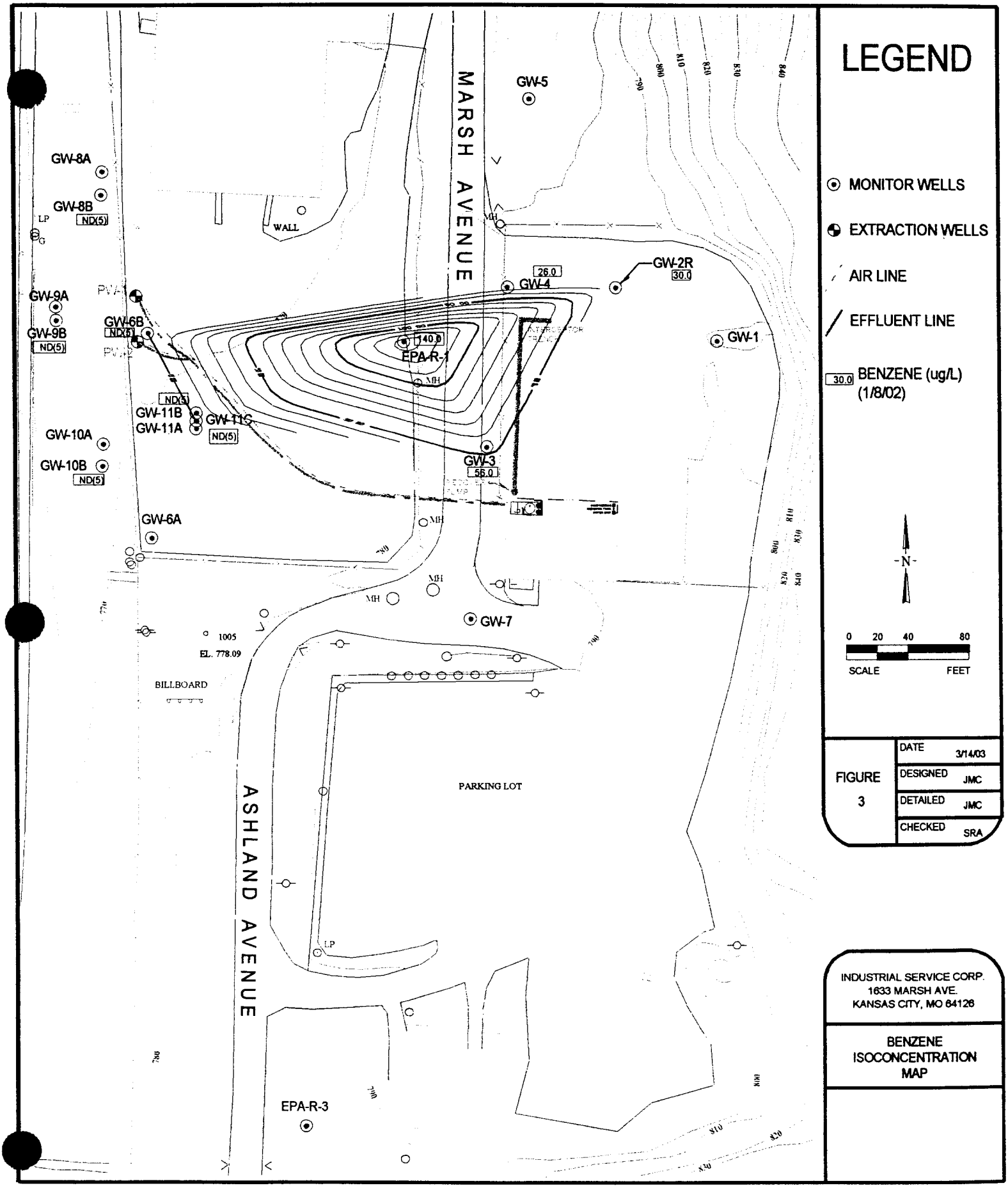

MARSH AVENUE
ASHLAND AVENUE
GW-8A
GW-8B
730.39
GW-9A
GW-9B
731.13
PW-1
727.91
729.41
GW-6B
PW-2
727.83
729.57
GW-11B
GW-11A
GW-11C
GW-10A
GW-10B
730.83
GW-6A
763.66
GW-5
GW-4
761.20
GW-2R
770.86
782.87
GW-1
749.97
EPA-R-1
GW-3
755.91
GW-7
758.86
EPA-R-3
760.64
BILLBOARD
PARKING LOT
WALL
735 00
740 00
745 00
750 00
755 00
760 00
765 00
LEGEND
MONITOR WELLS
EXTRACTION WELLS
AIR LINE
EFFLUENT LINE
EQUIPOTENTIAL LINE - 10.0 FOOT
EQUIPOTENTIAL LINE - 2.0 FOOT
782.87 STATIC WATER ELEVATION (1/8/03)
N
0 20 40 80
SCALE FEET
FIGURE 2
DATE 3/14/03
DESIGNED JMC
DETAILED JMC
CHECKED SRA
INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126
POTENTIOMETRIC SURFACE MAP
EQUIPOTENTIAL LINES CONSTRUCTED UTILIZING "B" ZONE WELLS

Figure 3-11



LEGEND

- MONITOR WELLS
- EXTRACTION WELLS
- AIR LINE
- EFFLUENT LINE
- 30.0 BENZENE (ug/L) (1/8/02)

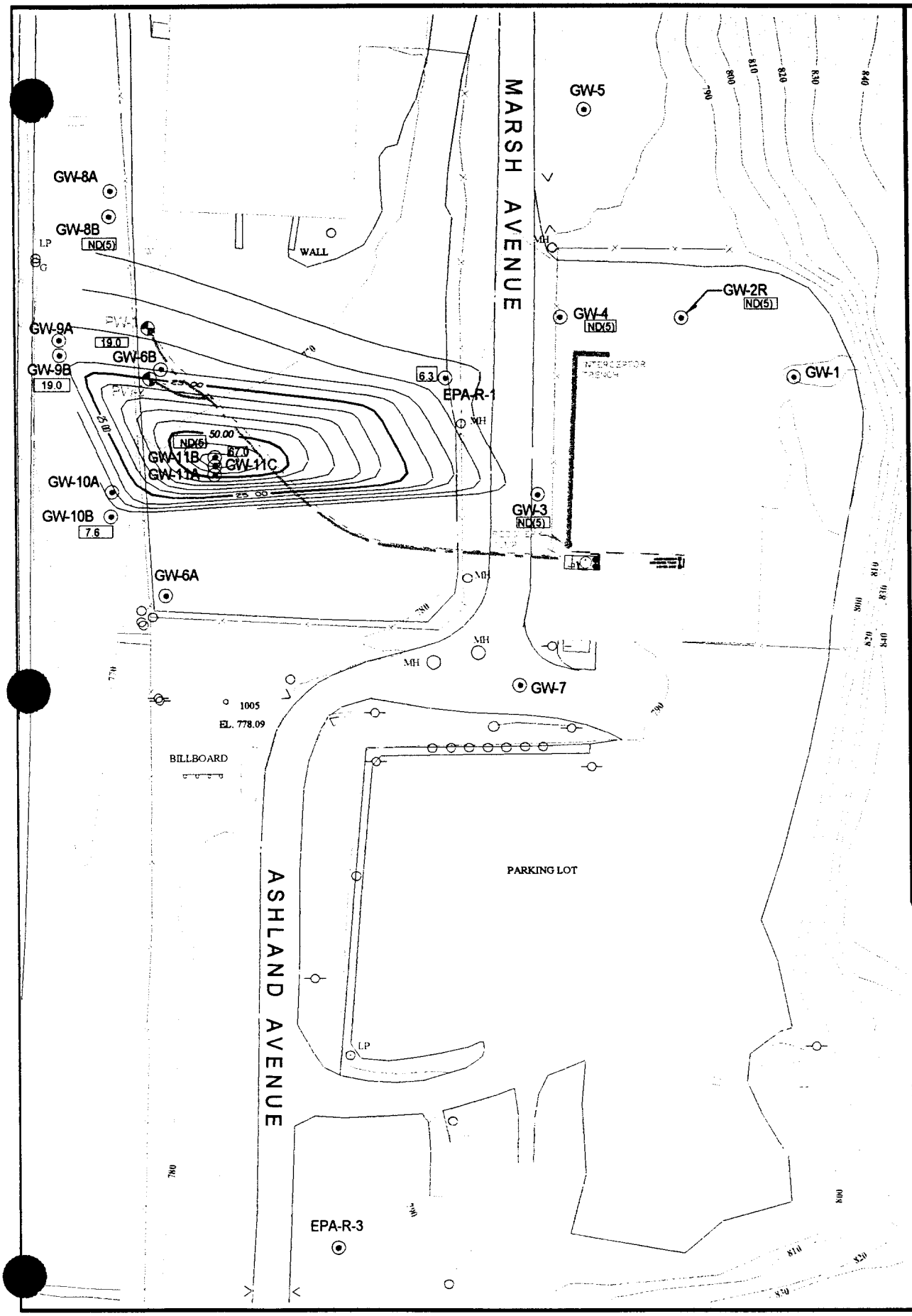
N

0 20 40 80
SCALE FEET

FIGURE 3		
	DATE	3/14/03
	DESIGNED	JMC
	DETAILED	JMC
	CHECKED	SRA

INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

BENZENE ISOCONCENTRATION MAP



LEGEND

- MONITOR WELLS
- EXTRACTION WELLS
- AIR LINE
- EFFLUENT LINE
- 19.0 cis-1,2-Dichloroethene (ug/L) (1/8/02)

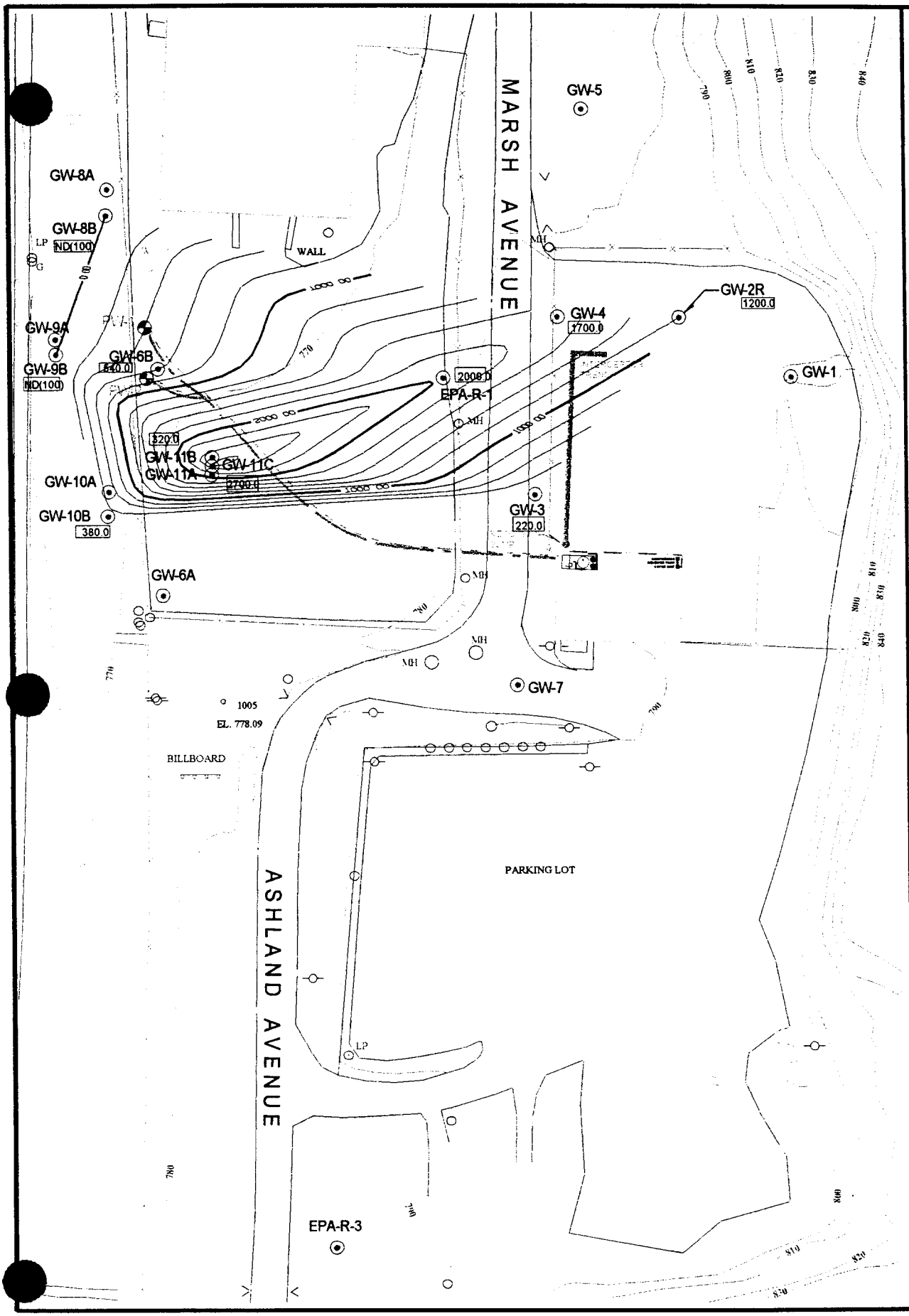
N

0 20 40 80
SCALE FEET

FIGURE 4	DATE 3/14/03
	DESIGNED JMC
	DETAILED JMC
	CHECKED SRA

INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

cis-1,2-Dichloroethene
ISOCONCENTRATION
MAP



LEGEND

- MONITOR WELLS
- EXTRACTION WELLS
- AIR LINE
- EFFLUENT LINE
- 220.0 1,4-Dioxane (ug/L) (1/8/03)

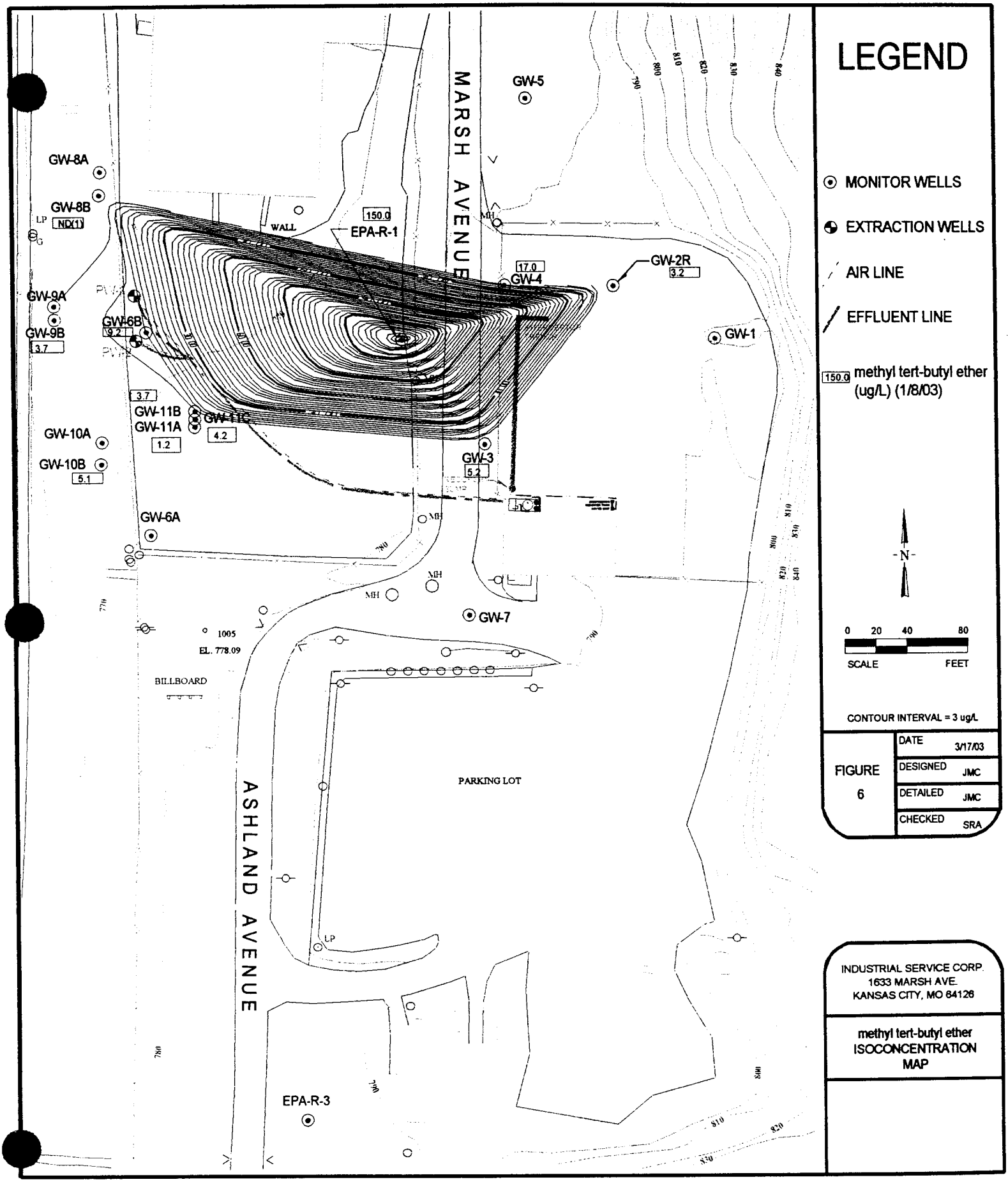
N

0 20 40 80
SCALE FEET

FIGURE 5	DATE 3/17/03
	DESIGNED JMC
	DETAILED JMC
	CHECKED SRA

INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

1,4-Dioxane
ISOCONCENTRATION
MAP



LEGEND

- MONITOR WELLS
- EXTRACTION WELLS
- AIR LINE
- EFFLUENT LINE
- 150.0 methyl tert-butyl ether (ug/L) (1/8/03)

N

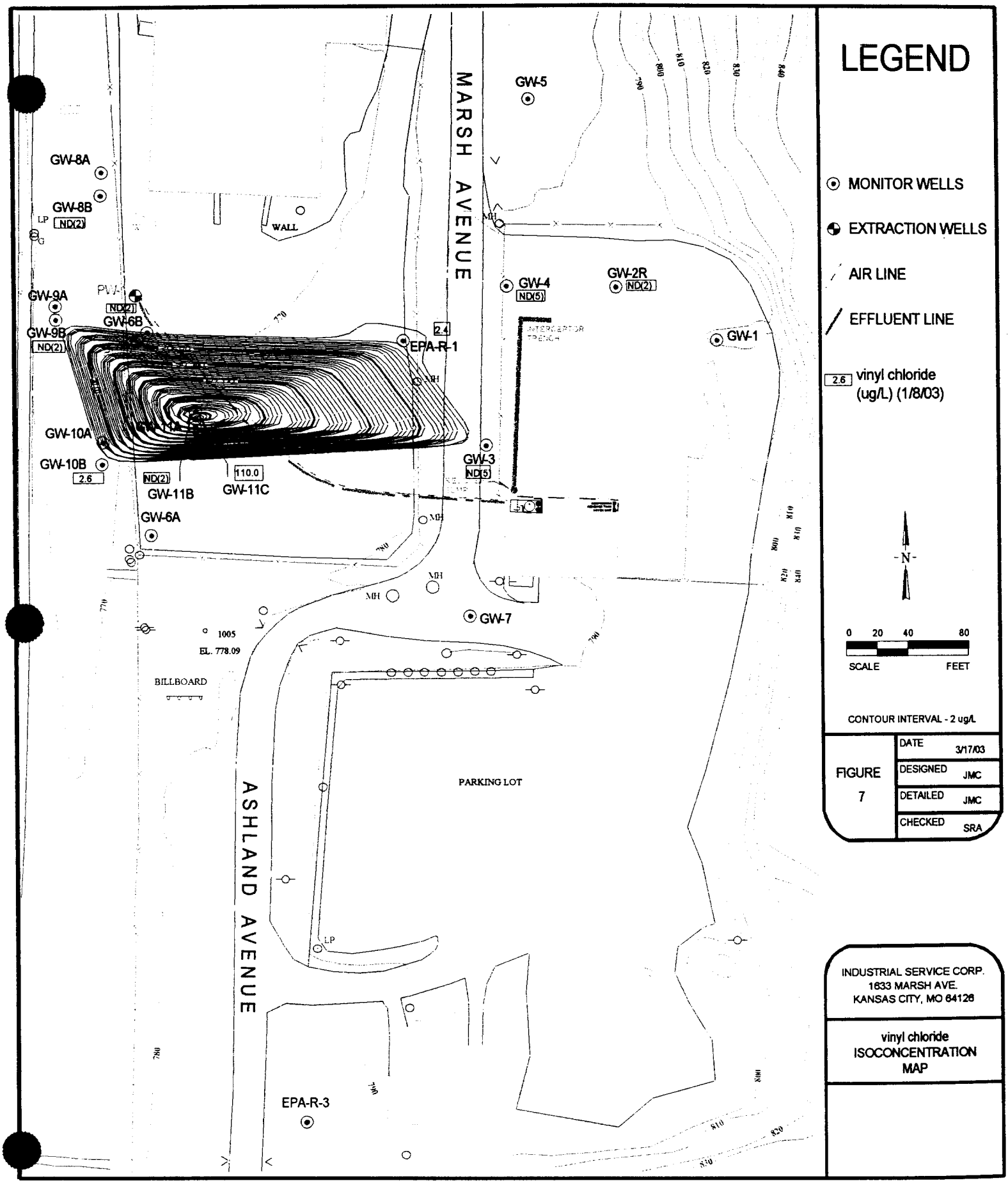
0 20 40 80
SCALE FEET

CONTOUR INTERVAL = 3 ug/L

FIGURE 6	DATE	3/17/03
	DESIGNED	JMC
	DETAILED	JMC
	CHECKED	SRA

INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

methyl tert-butyl ether ISOCONCENTRATION MAP



LEGEND

- MONITOR WELLS
- EXTRACTION WELLS
- AIR LINE
- EFFLUENT LINE
- 2.6 vinyl chloride (ug/L) (1/8/03)

N

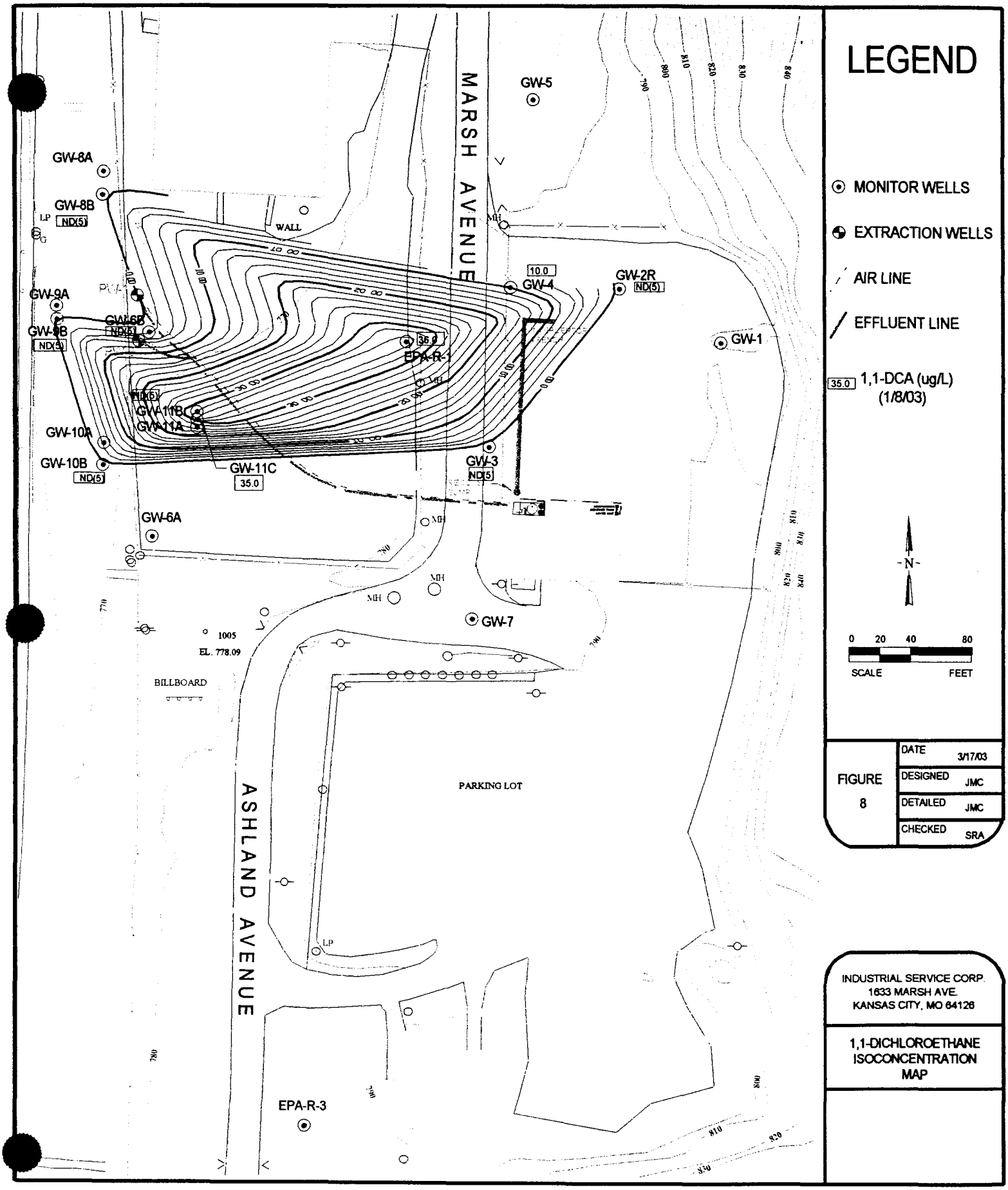
0 20 40 80
SCALE FEET

CONTOUR INTERVAL - 2 ug/L

FIGURE 7	DATE	3/17/03
	DESIGNED	JMC
	DETAILED	JMC
	CHECKED	SRA

INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

vinyl chloride
ISOCONCENTRATION
MAP



LEGEND

- MONITOR WELLS
- EXTRACTION WELLS
- AIR LINE
- EFFLUENT LINE
- 35.0 1,1-DCA (ug/L) (1/8/03)

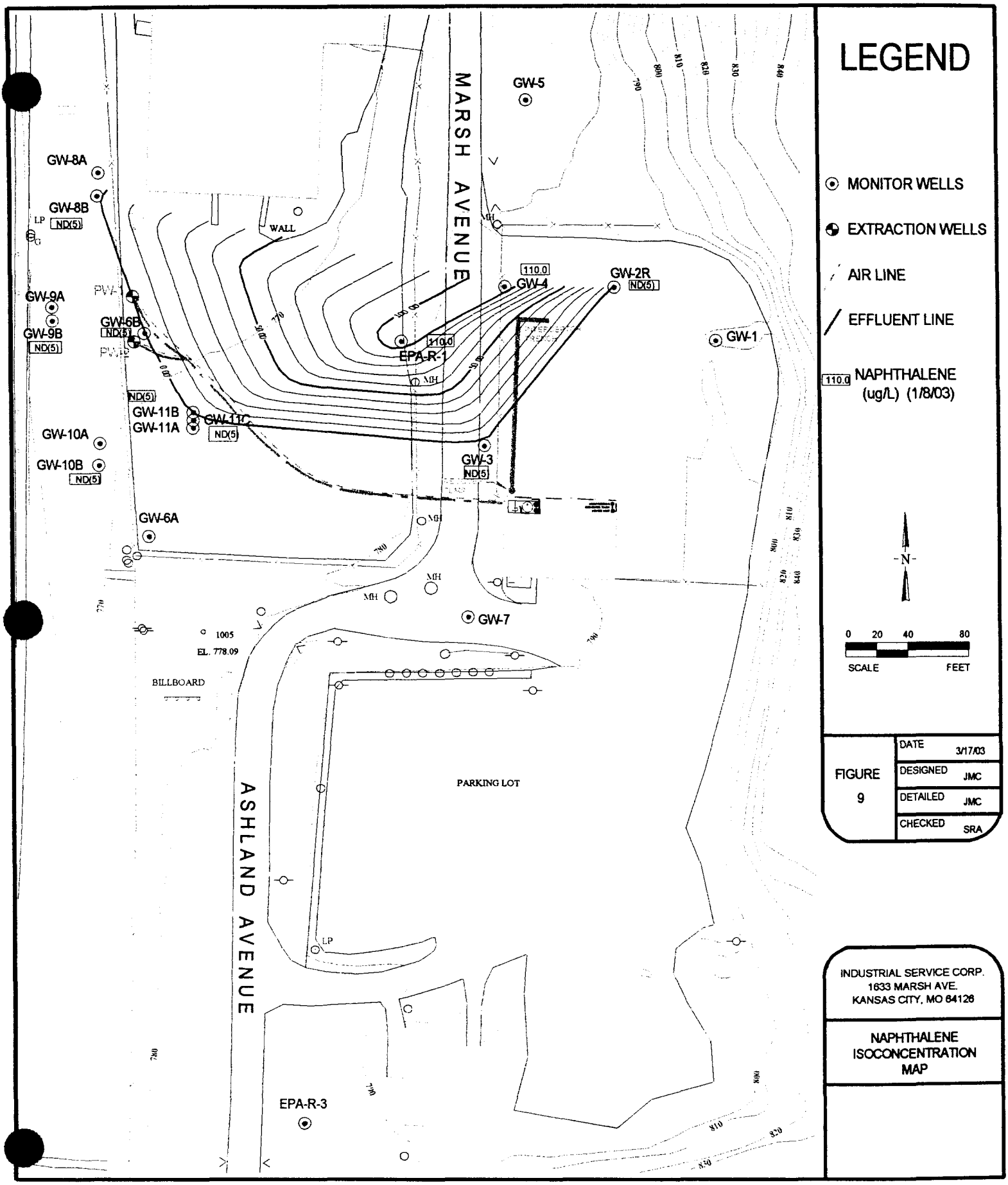
N

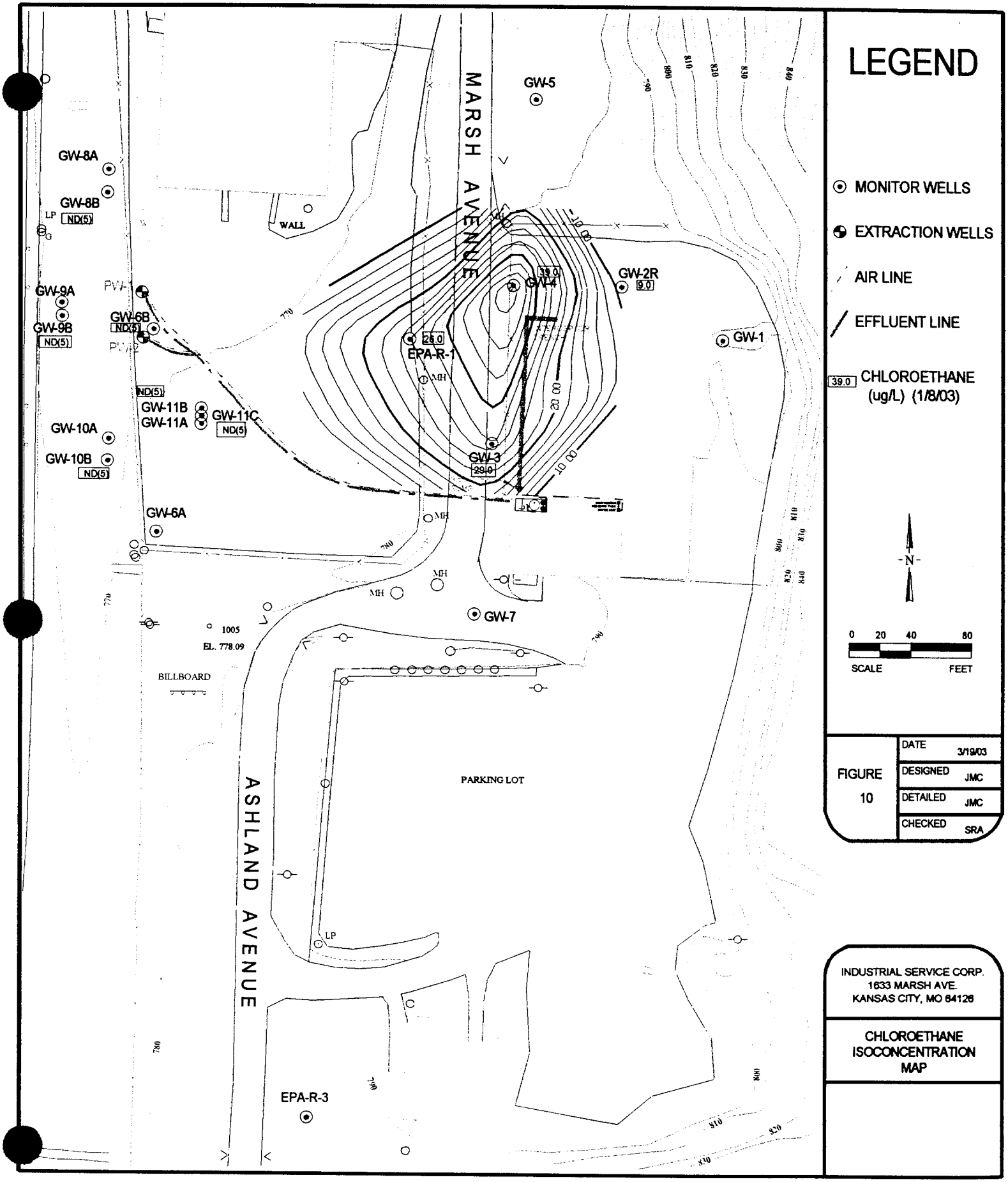
0 20 40 80
SCALE FEET

FIGURE 8		
	DATE	3/17/03
	DESIGNED	JMC
	DETAILED	JMC
	CHECKED	SRA

INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

1,1-DICHLOROETHANE ISOCONCENTRATION MAP


MARSH AVENUE
ASHLAND AVENUE
GW-5
GW-8A
GW-8B
GW-9A
GW-9B
GW-6B
GW-11B
GW-11A
GW-11C
GW-10A
GW-10B
GW-6A
GW-4
GW-2R
GW-1
GW-3
GW-7
EPA-R-1
EPA-R-3
110.0
ND(5)
WALL
BILLBOARD
PARKING LOT
1005
EL. 778.09
MH
LP
PW-1
PW-2
LEGEND
MONITOR WELLS
EXTRACTION WELLS
AIR LINE
EFFLUENT LINE
110.0 NAPHTHALENE (ug/L) (1/8/03)
N
0 20 40 80
SCALE FEET
FIGURE 9
DATE 3/17/03
DESIGNED JMC
DETAILED JMC
CHECKED SRA
INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126
NAPHTHALENE ISOCONCENTRATION MAP



LEGEND

- MONITOR WELLS
- EXTRACTION WELLS
- AIR LINE
- EFFLUENT LINE
- 39.0 CHLOROETHANE (ug/L) (1/8/03)

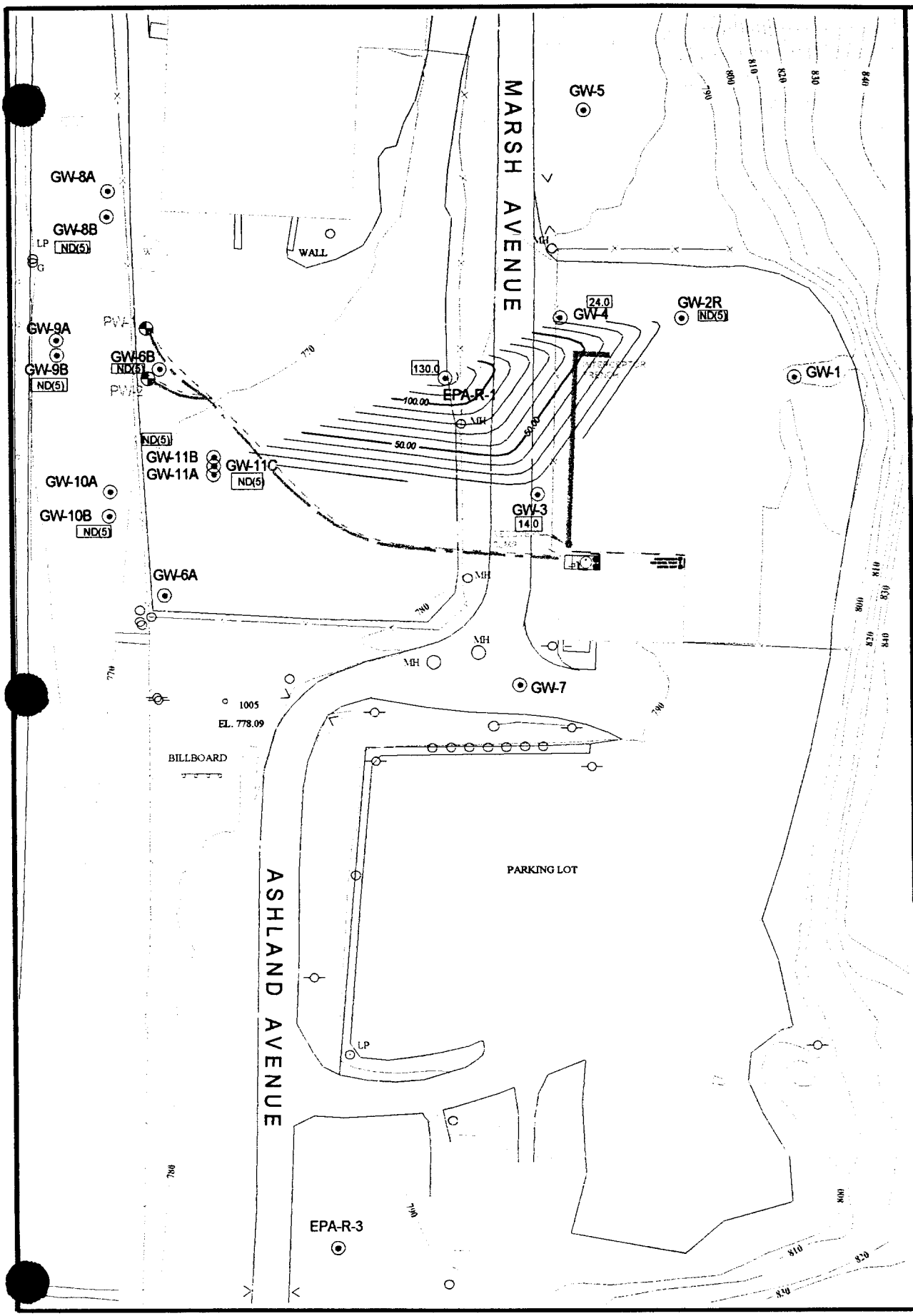
N

0 20 40 80
SCALE FEET

FIGURE 10	DATE 3/19/03
	DESIGNED JMC
	DETAILED JMC
	CHECKED SRA

INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

CHLOROETHANE ISOCONCENTRATION MAP



LEGEND

- MONITOR WELLS
- EXTRACTION WELLS
- AIR LINE
- EFFLUENT LINE
- 130.0 1,2,4-TMB (ug/L) (1/8/03)

N

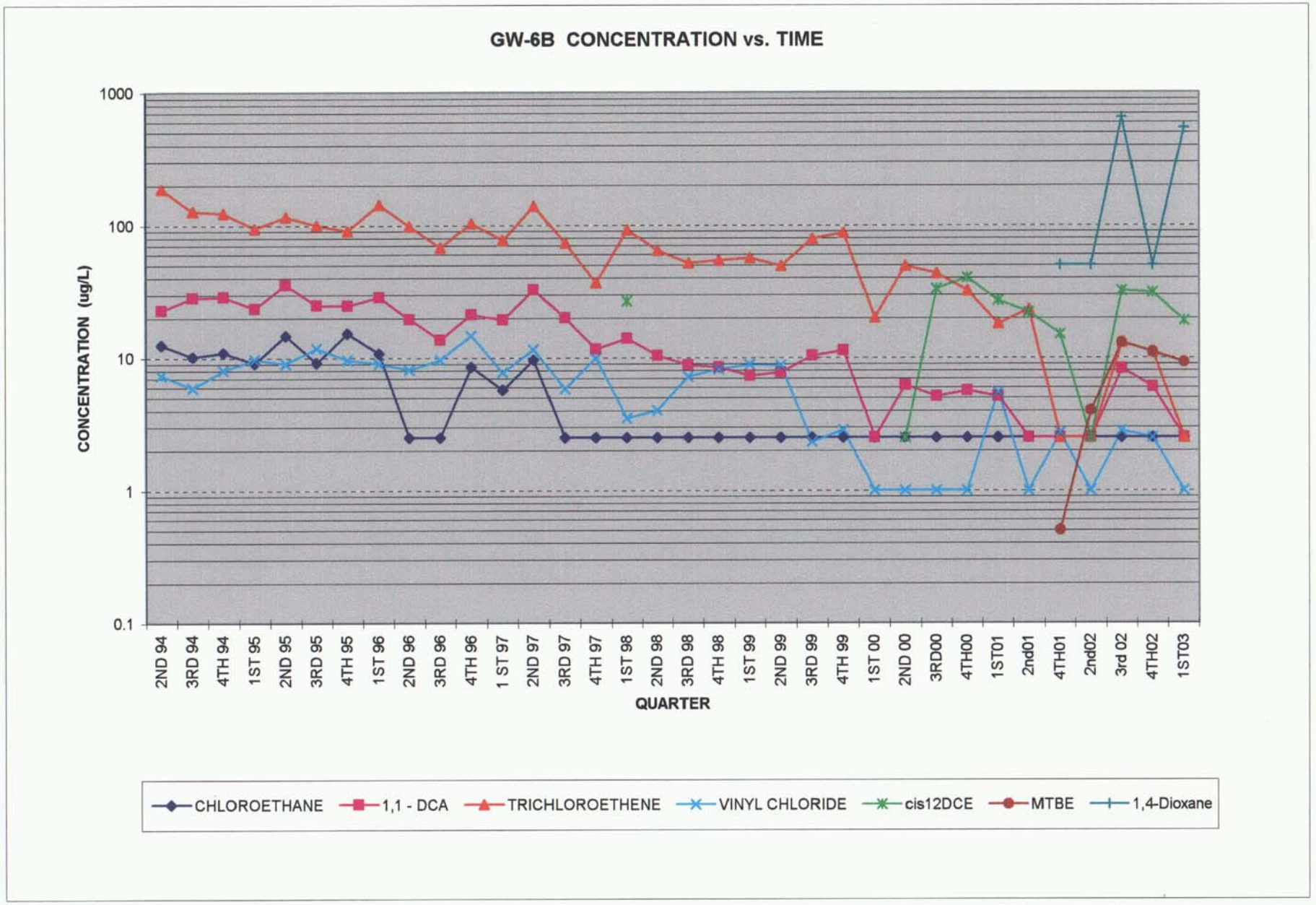
0 20 40 80
SCALE FEET

FIGURE 11	DATE 3/19/03
	DESIGNED JMC
	DETAILED JMC
	CHECKED SRA

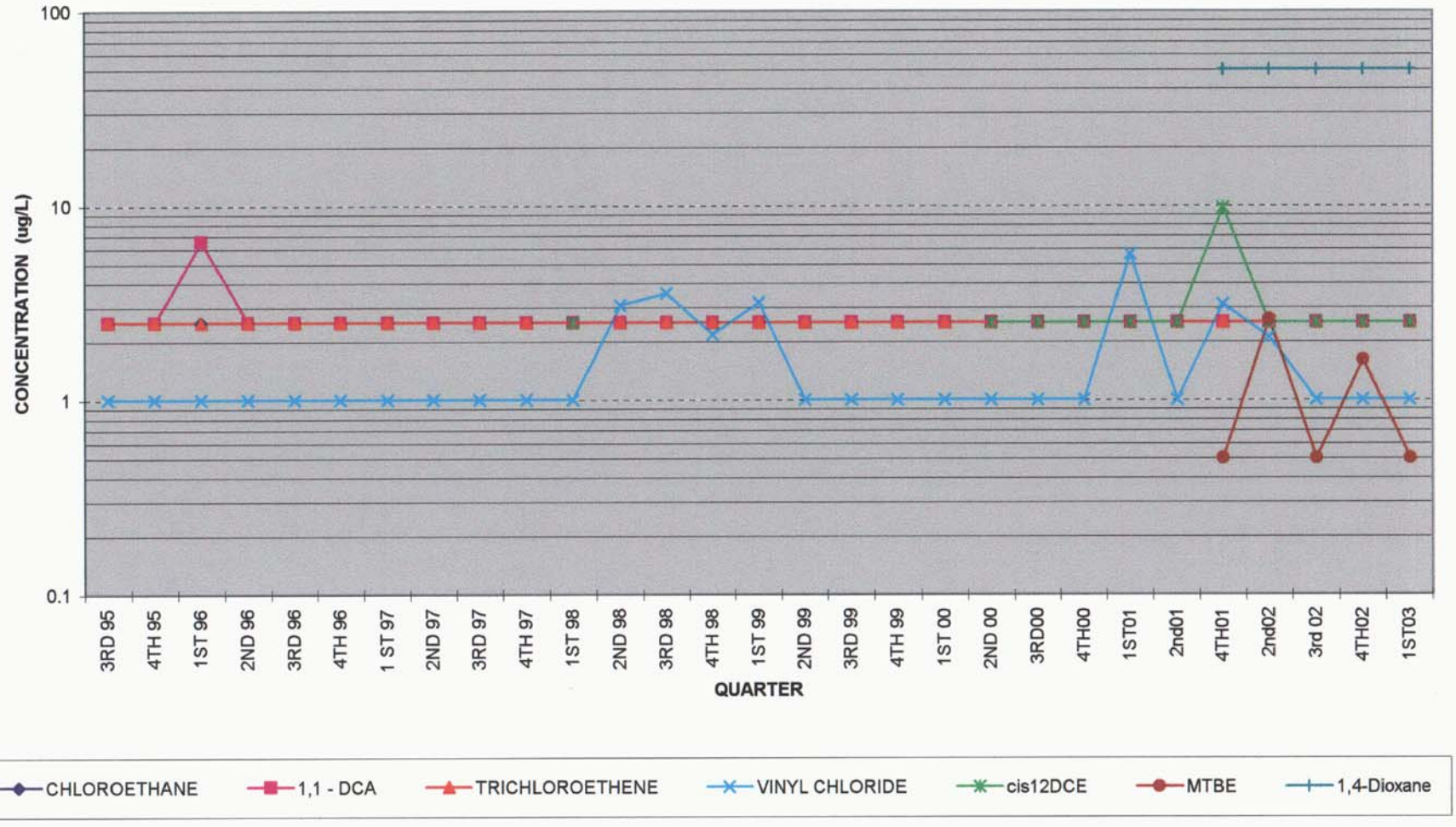
INDUSTRIAL SERVICE CORP.
1633 MARSH AVE.
KANSAS CITY, MO 64126

1,2,4-TRIMETHYLBENZENE ISOCONCENTRATION MAP

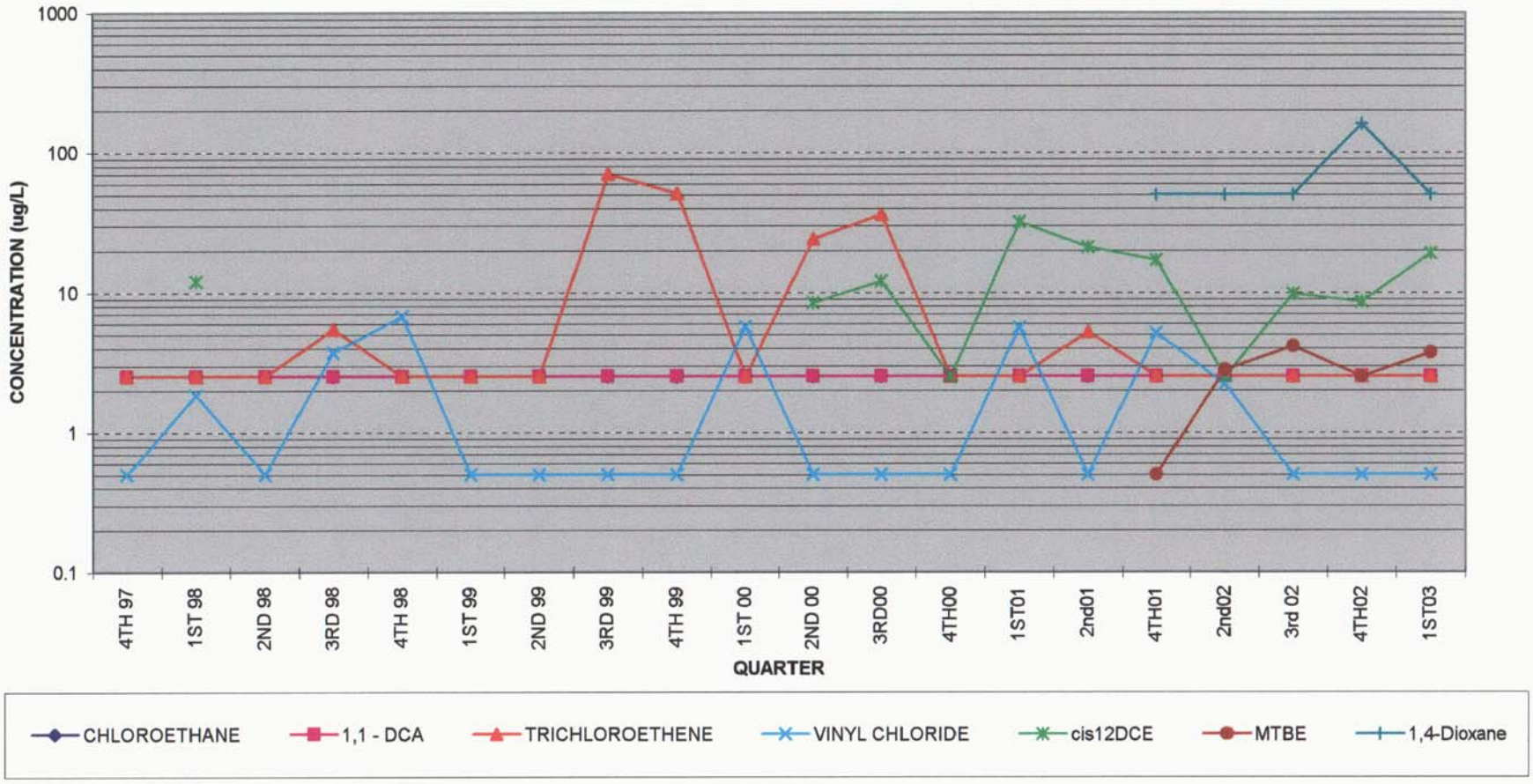
Time-Series Chart


GW-6B CONCENTRATION vs. TIME
CONCENTRATION (ug/L)
1000
100
10
1
0.1
2ND 94
3RD 94
4TH 94
1ST 95
2ND 95
3RD 95
4TH 95
1ST 96
2ND 96
3RD 96
4TH 96
1 ST 97
2ND 97
3RD 97
4TH 97
1ST 98
2ND 98
3RD 98
4TH 98
1ST 99
2ND 99
3RD 99
4TH 99
1ST 00
2ND 00
3RD00
4TH00
1ST01
2nd01
4TH01
2nd02
3rd 02
4TH02
1ST03
QUARTER
CHLOROETHANE
1,1 - DCA
TRICHLOROETHENE
VINYL CHLORIDE
cis12DCE
MTBE
1,4-Dioxane

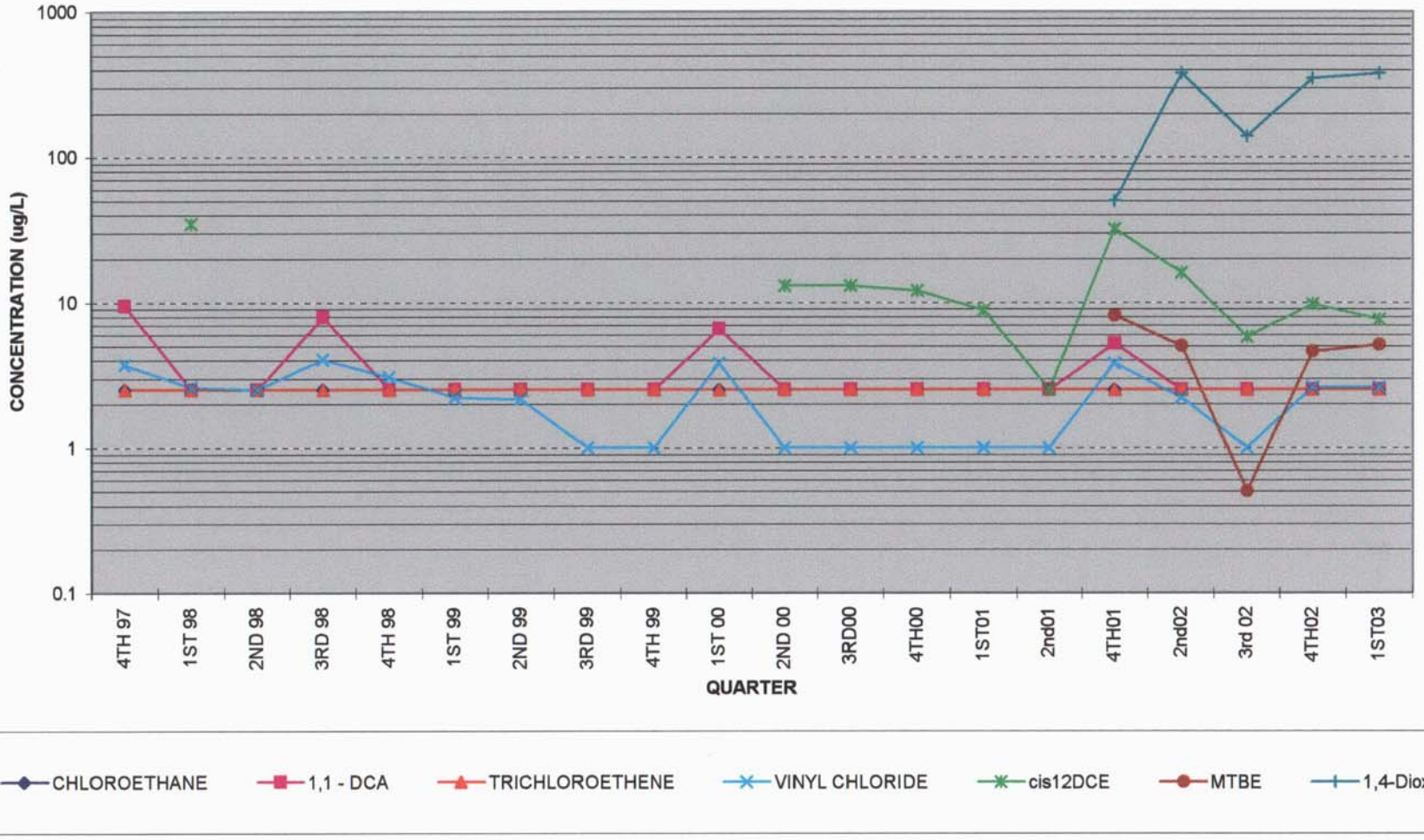
GW-8B CONCENTRATION vs. TIME



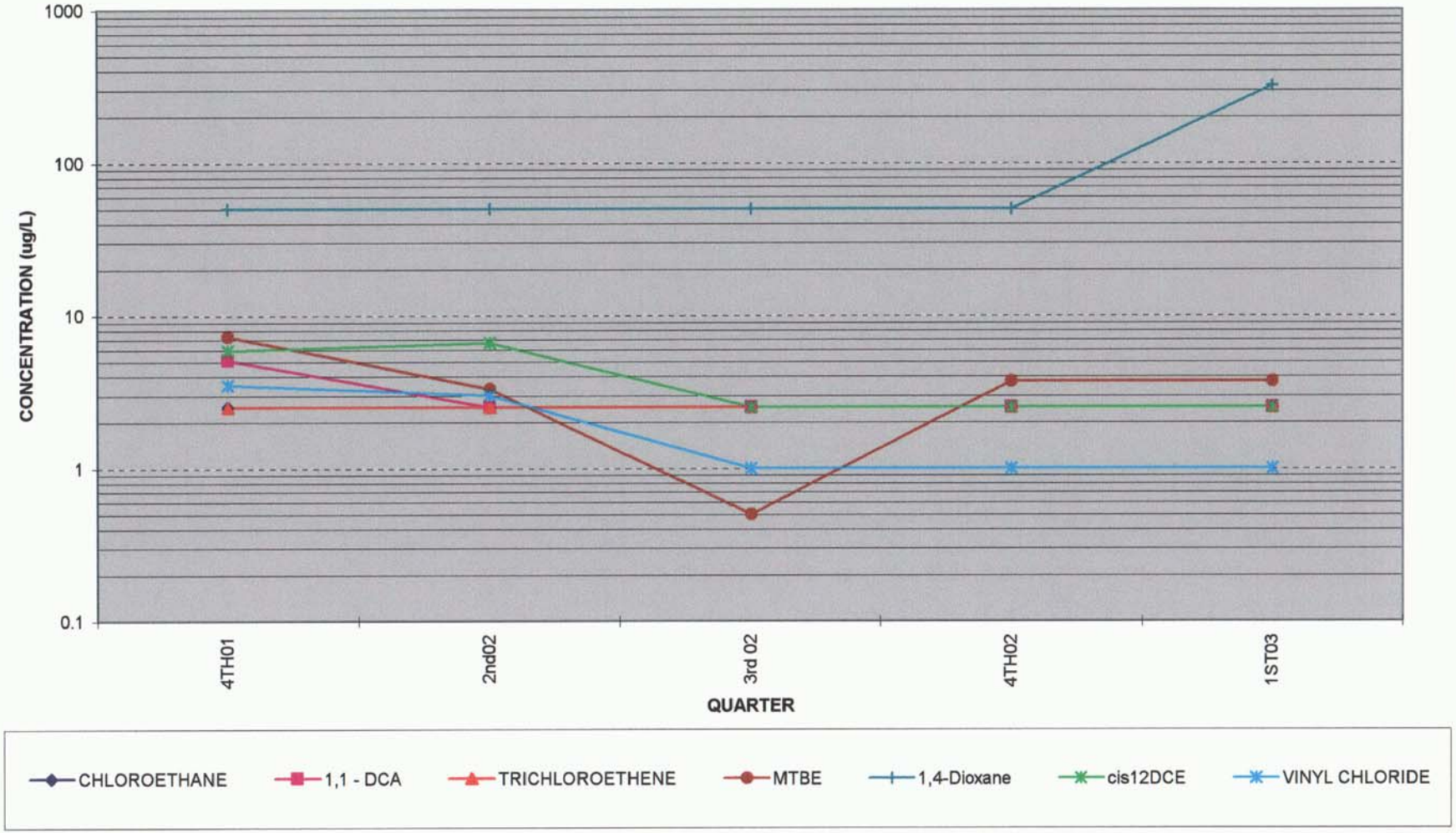
GW-9B CONCENTRATION vs. TIME



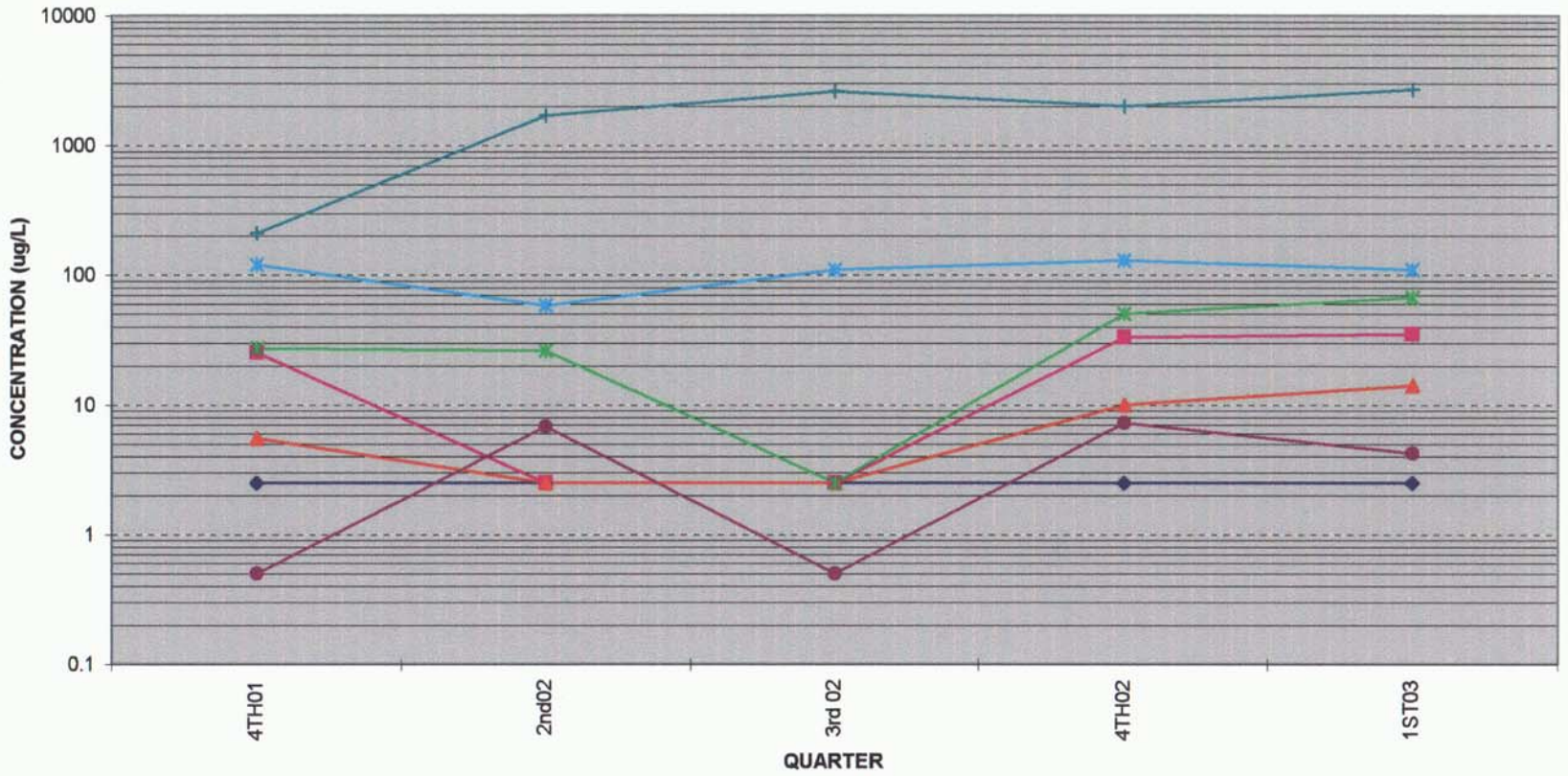
GW-10B CONCENTRATION vs. TIME



GW-11B CONCENTRATION vs. TIME

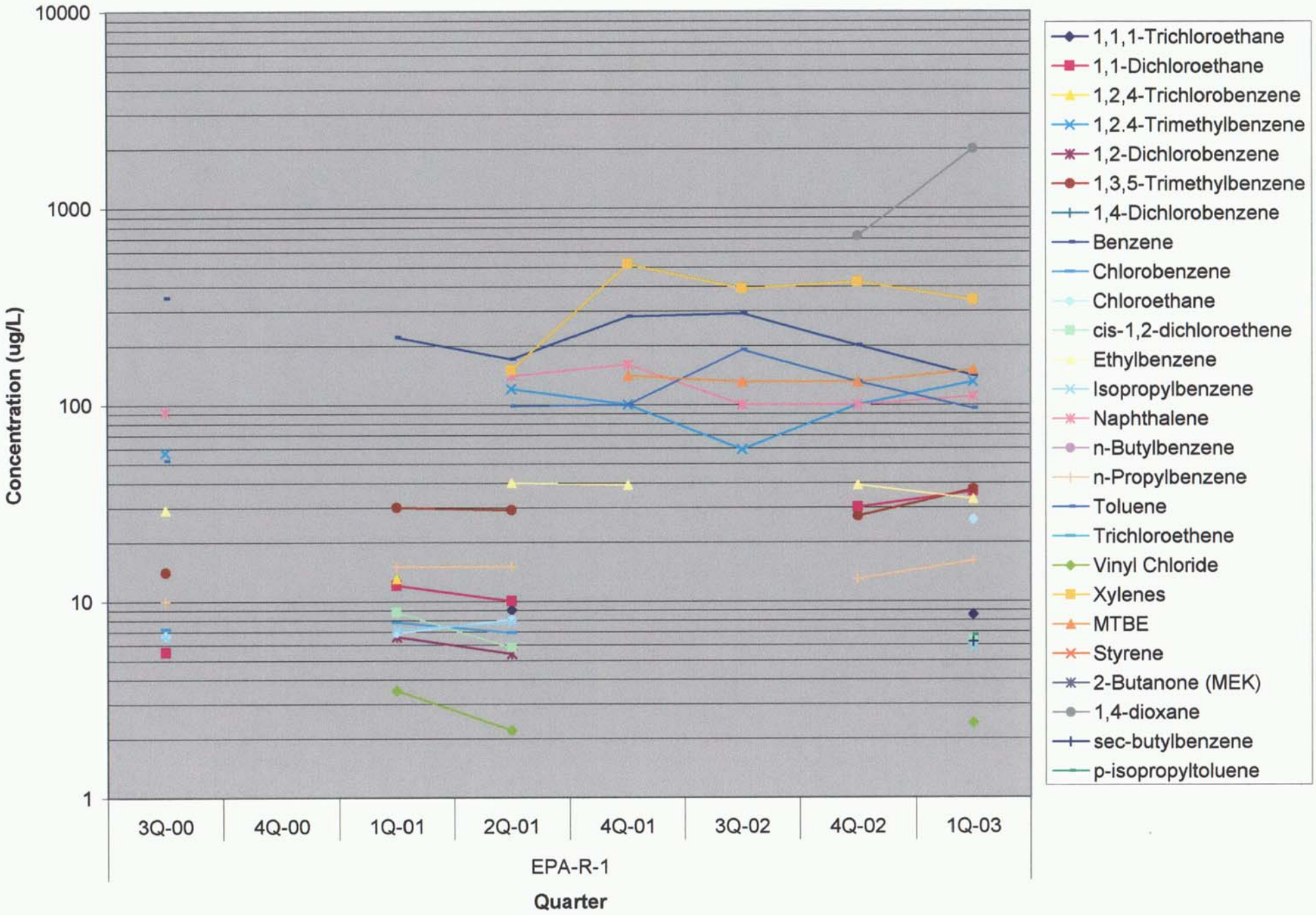


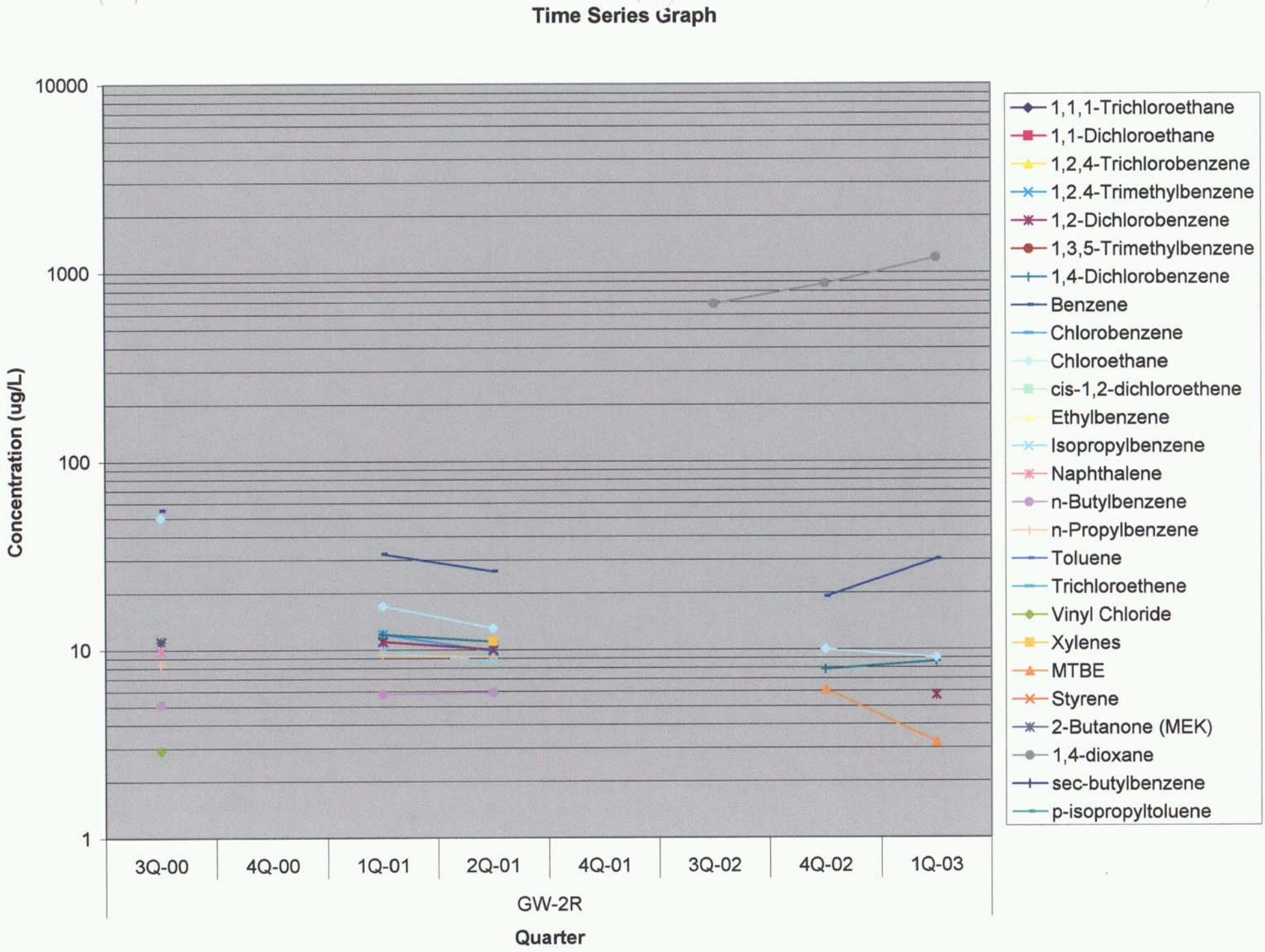
GW-11C CONCENTRATION vs. TIME

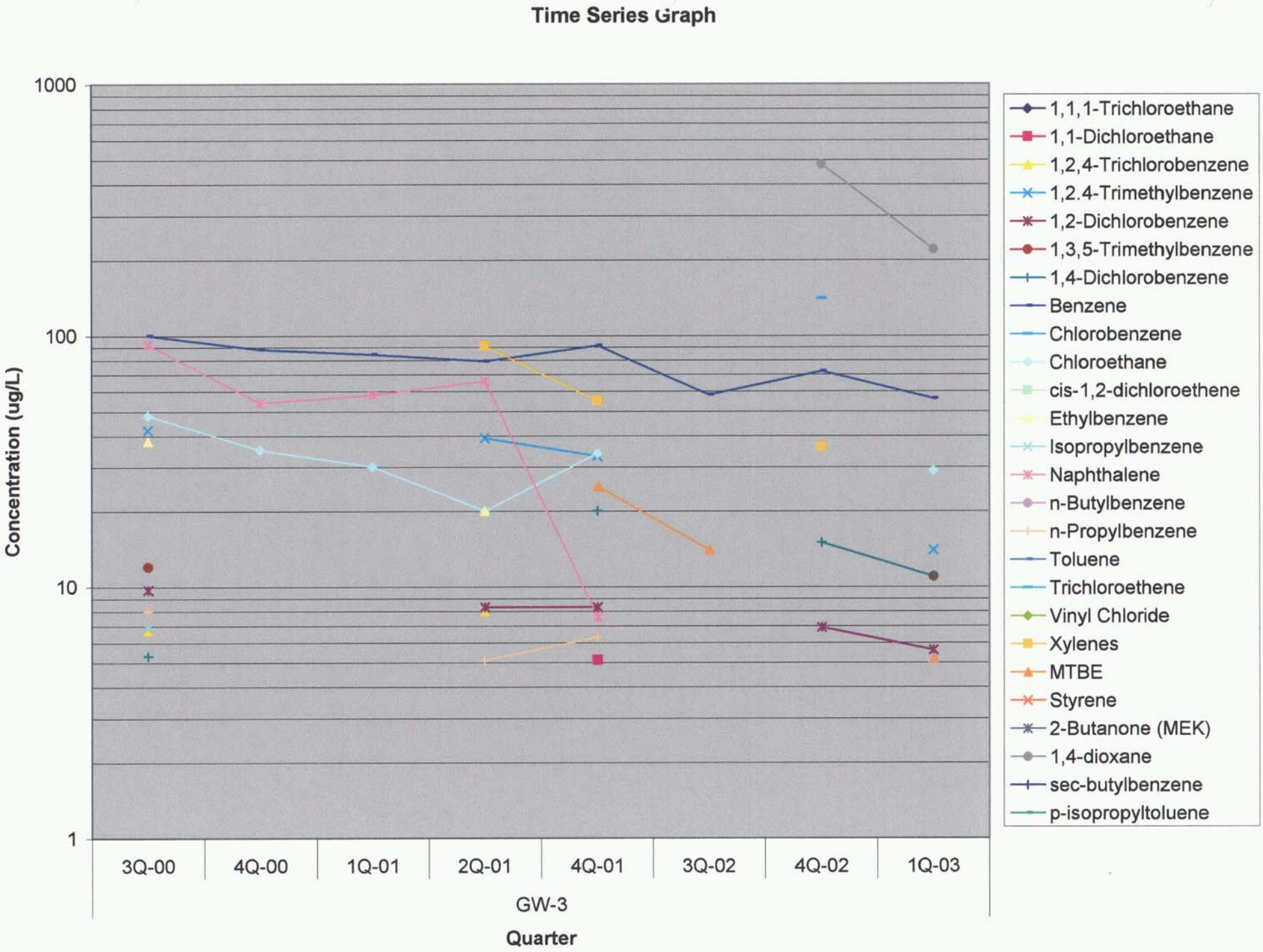


LNAPL Charts

Time Series Graph




Time Series Graph
10000
1000
100
10
1
Concentration (ug/L)
3Q-00
4Q-00
1Q-01
2Q-01
4Q-01
3Q-02
4Q-02
1Q-03
GW-2R
Quarter
1,1,1-Trichloroethane
1,1-Dichloroethane
1,2,4-Trichlorobenzene
1,2.4-Trimethylbenzene
1,2-Dichlorobenzene
1,3,5-Trimethylbenzene
1,4-Dichlorobenzene
Benzene
Chlorobenzene
Chloroethane
cis-1,2-dichloroethene
Ethylbenzene
Isopropylbenzene
Naphthalene
n-Butylbenzene
n-Propylbenzene
Toluene
Trichloroethene
Vinyl Chloride
Xylenes
MTBE
Styrene
2-Butanone (MEK)
1,4-dioxane
sec-butylbenzene
p-isopropyltoluene


Time Series Graph
1000
100
10
1
Concentration (ug/L)
3Q-00
4Q-00
1Q-01
2Q-01
4Q-01
3Q-02
4Q-02
1Q-03
GW-3
Quarter
1,1,1-Trichloroethane
1,1-Dichloroethane
1,2,4-Trichlorobenzene
1,2.4-Trimethylbenzene
1,2-Dichlorobenzene
1,3,5-Trimethylbenzene
1,4-Dichlorobenzene
Benzene
Chlorobenzene
Chloroethane
cis-1,2-dichloroethene
Ethylbenzene
Isopropylbenzene
Naphthalene
n-Butylbenzene
n-Propylbenzene
Toluene
Trichloroethene
Vinyl Chloride
Xylenes
MTBE
Styrene
2-Butanone (MEK)
1,4-dioxane
sec-butylbenzene
p-isopropyltoluene

Time Series Graph